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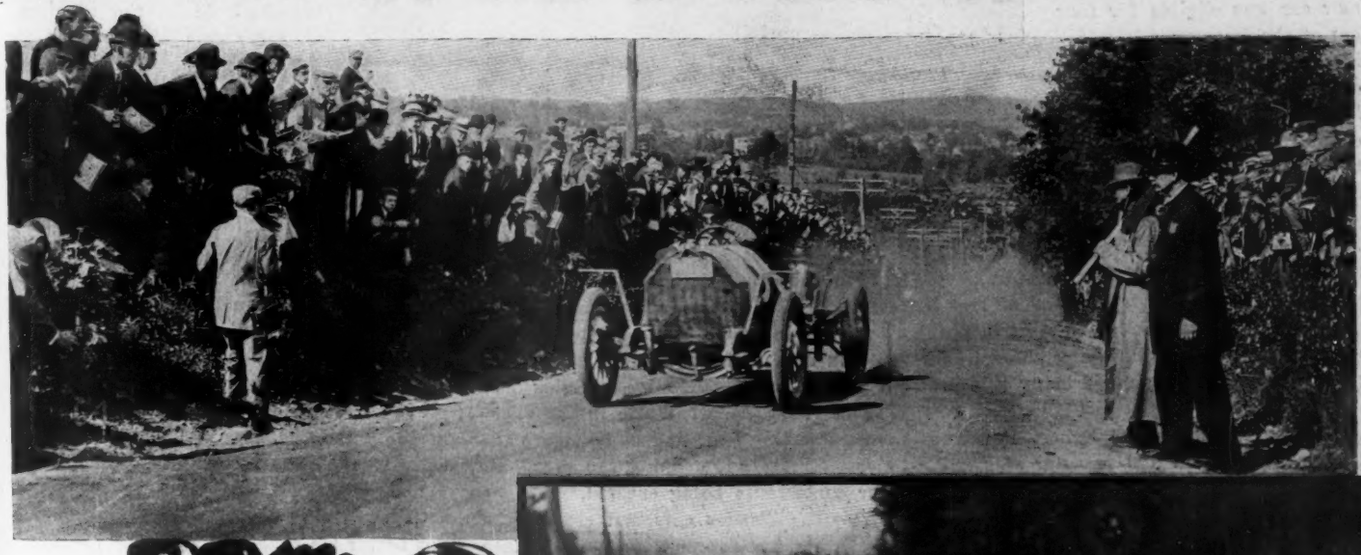
MOTOR AGE

FIAT FASTEST CAR IN DEAD HORSE CLIMB



Harry F. Grant in Alco Six
Caleb Bragg in Fiat 90 on the Hill

WORCESTER, MASS., June 6—All efforts to smash the record of 54 seconds for the mile course up Dead Horse hill Saturday at the fifth annual contest of the Worcester Automobile Club proved futile and Baldwin's famous scoot with the Stanley steamer racer last year still has to be beaten. Though this record remains unbeaten, there were nine other records that were wiped off the slate and new ones established, as follows:

NEW RECORDS

Free-for-all gasoline cars, Fiat, :58.
Amateur, Worcester county, Stanley, 1:09.9.
451 to 600 cubic inches piston displacement, Alco, 1:02.1.
301 to 450 cubic inches piston displacement, Jackson, 1:11.4.
161 to 230 cubic inches piston displacement, Staver-Chicago, 1:25.1.
Cars costing $801 to $1,200, Cameron, 1:33.9.
Cars costing $1,601 to $2,000, Jackson, 1:10.9.
Cars costing $4,000 and over, Thomas, 1:06.4.

The most noteworthy of these events was the performance of the big 90-horsepower Fiat car driven by young Caleb Bragg, the Cincinnati amateur, who drove his car up the mile climb of 325 feet in just 58 seconds flat, establishing a new mark for gasoline car for hill-climbing. The previous record was :59 made in 1908 by a Chadwick driven by Willie Houpt. Not only did Bragg make the best time of the contest, but his 1:00.3 which was made on his second trip up the steep grade was not touched by any other car, Harry Grant in the big Alco which won the last Vanderbilt cup race coming the nearest with 1:02, giving Bragg the two events in which he started.

The other records which were made are credited to stock cars, six gasoline and one steamer, and the new record of the latter was made in the Worcester county amateur championship event for all types of cars by Jay Clark, Jr., of Worcester, the owner and driver who clipped off with his Stanley steamer a fraction of over 3 seconds from the record of 1:13 made by him last year, when he won the first leg on the cup which must be won three times before it becomes his property.

The Staver-Chicago, Alco and Jackson lowered the former records made by cars with the same piston displacement, while the Thomas Flyer, Cameron and Jackson put up new records in the cost events. The Staver-Chicago made an excellent showing winning the only event in which it had been entered, W. A. Wheelock, the driver, sending the Chicago car up the hill in

1:25.1, beating the Cole 30, Maxwell and Lancia, the Cole finishing in the event with the second best time.

The Houpt-Rockwell, of which much was expected, was disbarred from racing in the events in which it was entered upon instructions from the American Automobile Association, which ruled that the car entered could not be classed as stock, being the only one of its particular make put out by the New York company. The new car was eligible for four out of the five events in which it was entered, but after Starter Wagner and Referee Gillette disqualified the car in event 1A the managers refused to compete in the free-for-all events.

R. H. HIGGINS CLIMBING HILL IN STEARNS CAR

Nelson Slater, the Webster amateur driver, was not allowed to start in 10A, which called for gasoline stock cars, because he had his Lancia stripped of mudguards, but he was allowed to start in the other amateur events in which he made a good showing, although not being a winner of any.

The non-appearance of Robert Burman to drive the Buick 100 roadster was another drawback to the annual contest, as was the non-appearance of the big Stoddard-Dayton which arrived at the foot of the climb with the expectations of starting but was disbarred owing to the fact that the entrance fee had not been paid. The only other car that did not put in an appearance although entered was the Warren-Detroit.

The first car to go up the 325-foot climb was the 70-horsepower Thomas Flyer driven by John J. Kingsley, the Boston amateur, who made a bad start, not throwing in his third speed until he had passed ⅛ mile up the steep climb, but as he was the only contestant in the class he had nothing to fear, the Houpt-Rockwell having been disqualified. The Thomas Flyer in this event set a new record for cars costing $4,000 and over, the time being 1:06.4, against 1:08.1 made by the Simplex in last year's contest.

R. H. Higgins, a Worcester dealer, drove his Stearns car up the hill, carrying four passengers in the second event for cars costing $3,001 to $4,000, in which he was the only entrant, in 1:53, which was slow considering the type of car. The next event for cars costing $2,001 to $3,000 the Atlas was the only car to run.

The Jackson driven by R. M. Lovejoy made its first record of the contest in the fourth event, for cars costing $1,601 to $2,000, when he sent the car up the steep grade in 1:10.9, beating last year's record of 1:22⅘ made by the Buick. The Oakland was a contestant in this event.

The Cameron with E. S. Cameron at the wheel in the next event for cars costing $1,201 to $1,600, won in 1:38.6, while in the next event without any other contestants F. F. Cameron drove the Cameron up the hill in 1:33.9, making a new record for cars costing from $801 to $1,200, the old record being made by a Buick last year in 1:49. Albert White in the event for cars costing $800 and under drove the Cameron in 1:49.1, winning the event, no other contestants being entered.

After the smaller cars had cleared the hill the big free-for-all cars got into place and Harry F. Grant at the wheel of the Alco which won the last Vanderbilt race, was the first to be sent off. He did not get away as fast as he had expected, but finished the mile in 1:02, beating his last year's record in the same event. The Jackson, with R. M. Lovejoy at the wheel, was the next to start and made the mile in 1:08.8, and was followed by Bragg, who made :58.

In this event the record of :54 made by Baldwin in a Stanley steamer would have been broken had young Bragg been able to have kept his big machine in the center of the road.

In event 12B the Staver-Chicago driven by F. A. Wheelock broke the previous time for cars of this class of 1:51.1 held by the Chalmers by making the climb in 1:25.1, while the Maxwell, Cole 30 and the Lancia, the other three cars in the event, eclipsed the former records made in last year's contest on the Dead Horse hill course.

E. P. Blake drove his Jackson car in event 14B for piston displacement 301 to 450 cubic inches minimum weight of 2,000 pounds up the hill in 1:11.4, which made the second record for the Jackson car, the previous record for this class being 1:19 made by the Chalmers in 1909. The Berkshire was a close second in this event in 1:23.6.

Grant driving the Alco in event 15B did not better his time in one of the previous events, but he gets the credit of a new record with the car for this class, making the climb in 1:02.1, against the record held by the Allen-Kingston last year of 1:09⅗. In the free-for-all for gasoline

TABLE SHOWING TIMES MADE IN DEAD HORSE HILL-CLIMB

Car	Driver	Bore	Stroke	Model	Time
EVENT 1A, $4,000 AND OVER					
Thomas Flyer	John J. Kingsley	5½	5½	K	1:06.4
EVENT 2A, $3,001 TO $4,000					
Stearns	R. H. Higgins	4½	4⅝	1910	1:53
EVENT 3A, $2,001 TO $3,000					
Atlas	Elmer G. Knox	5	5	G	1:31.2
EVENT 4A, $1,601 TO $2,000					
Jackson	R. M. Lovejoy	4⅞	4⅜	59	1:10.9
Oakland roadster	Howard A. Bauer	4½	5	1910	1:30.8
EVENT 5A, $1,201 TO $1,600					
Cameron	E. S. Cameron	3⅞	3¾	15	1:38.6
Parry	Eddie Ditteau	4½	4½	1910	1:56.7
EVENT 6A, $801 TO $1,200					
Cameron	F. F. Cameron	3⅞	3¾	12	1:33.9
Oakland	Howard A. Bauer	4	4	24	1:43
Maxwell	Martin Dorley	3¾	4	1910	1:47.1
Buick	Duncan Hooker	3¾	3¾	1908	2:24.6
EVENT 7A, $800 AND UNDER					
Cameron	Albert White	3⅞	3¾	12	1:49.1
EVENT 9, FREE-FOR-ALL					
Fiat	Caleb Bragg	5¼	7⅜		:58
Alco	Harry F. Grant	4¾	5½	460	1:02
Jackson	R. M. Lovejoy	4⅞	4¾	59	1:08.8
EVENT 10, AMATEURS, OWNERS TO DRIVE					
Stanley steamer	Jay Clark, Jr.	4½	6½	K	1:09.9
Lancia	Nelson Slater	3¾	4⅞	1909	1:33

cars Grant sent his car up in the best time that the Vanderbilt cup winner made during the day's contest. In this same event the Thomas Flyer driven by Kingsley made the climb in 1:04, which was the best time made by the big car in the contest.

Kingsley won the open amateur event for gasoline cars, going up in 1:05.8, Slater in the Lancia, the only other contestant, doing but 1:33. In the record-for-the-hill event three cars started, including the Stanley steamer, with Marriott driving. Marriott finished the mile in the slowest time the car ever went up the hill, his time being 1:09.1. Bragg, the next to start, was more careful than on his previous climb and in doing so did not make any better time than 1:00.3, but still the best in this event. The Alco, the last car to start, did 1:01.8.

VIEW AT DEAD HORSE HILL AT THE STARTING LINE

Worcester Cars Protested

New York, June 7—Special telegram—Some exceedingly difficult questions have arisen over the running of the hill-climb of the Worcester Automobile Club, at Worcester, Mass., last Saturday and two protests have been filed with the contest board of the A. A. A. against the Jackson and Lancia entries which performed so creditably. Chairman Butler is in receipt of the formal objections raised against each car and in discussing the situation said: "The protest claims the two cars were not fully equipped touring cars within the purview of this board. The Jackson car model 59 is shown in the catalog of that company, stripped to its lowest terms. The contention is made that the car that took part in the stock car event answered the specifications of that model as contained in the certificate on file with this board and advertised by the company. While the car undoubtedly was not a fully equipped stock car this technicality seems to bring it within the letter of the rules, even if it was outside as far as the spirit is concerned. The Lancia car is made abroad and is sold f. o. b. New York in form similar to a stripped chassis. The same objection has been made against it as has been alleged against the Jackson."

Boston, Mass., June 7—John J. Kingsley, the Boston amateur, who won two firsts and one second in his Thomas at the Worcester hill-climb, has filed a protest against the winning Alco driven by Grant in the free-for-all gasoline stock cars, basing his protest on the fact that while he went up the hill fully equipped the Alco was stripped to little more than a chassis. As there was only 3 seconds difference in time Kingsley thinks the extra weight he carried may have made a difference in the general results, hence the protest he has filed. It will be remembered Kingsley is an amateur, and this being one of his first attempts at contests, he naturally is proud of his work. He feels that he was handicapped in running with all his equipment on, and therefore he is desirous of hearing what the contest board of the association has to say.

PHILADELPHIA COMPETITION

Philadelphia, Pa., June 6—Last Saturday being the date for the primary elections in this city, the race committee of the Quaker City Motor Club decided to postpone its fourth annual summer track meet at Point Breeze, originally scheduled for that day, till Saturday, June 18.

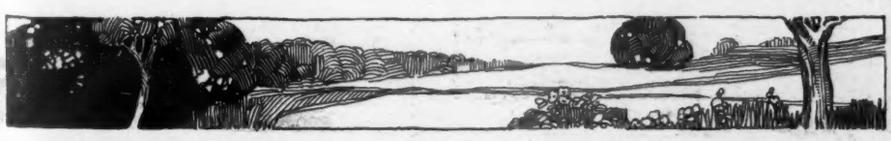
Next Saturday the Premier roadability run, in which over 100 local owners of Premier cars are entered, will take place. The objective point is Cape May. Besides the various prizes for the drivers who most closely approximate the secret time schedule for the entire distance, additional prizes have been offered by cities along the route—Bridgeton, Vineland, Cape May Court House, etc.—which will be awarded on the same basis; intermediate secret times will be established by the officials of each city offering a prize.

The contest fever has attacked even the ultra-conservative Automobile Club of Philadelphia, and the tours and runs committee of that organization has planned a 2-day tour, with a secret-time schedule for each day, to Lake Hopatcong, N. J., and return. Allen Shelden, chairman of the committee, will endeavor to induce officials of large towns on the route to offer prizes for the driver who covers the distance from each day's start to the town mentioned closest to the official secret time. This scheme promises to work out well in next Saturday's Premier run. Members only are eligible to compete.

The sociability run of the North Wildwood Automobile Club from this city to Wildwood on June 2 next, the preliminary to the club's races on the speedway there on the 4th, promises to be well patronized. The route will be laid out via Salem and Bridgeton, the club of the first named city having asked the privilege of furnishing lunch to the contestants.

TABLE SHOWING TIMES MADE IN DEAD HORSE HILL-CLIMB

Car	Driver	Bore	Stroke	Model	Time
EVENT 12B, 161-230 CLASS					
Staver-Chicago	F. A. Wheelock	4	4	H	1:25.1
Cole 30	Frank D. Costello	4	4	1910	1:26.1
Lancia	Rene La Roumier	3⅜	4⅜	1909	1:40.3
Maxwell	Th. Costello	4 9/64	4¼	1911	1:41
EVENT 14B, 301-450 CLASS					
Jackson	E. P. Blake	4⅞	4¾		1:11.4
Berkshire	Stuart H. Clapp	4 11/16	5½	1910	1:23.6
Oakland roadster	H. A. Bauer	4½	5	M	1:29
EVENT 15B, CLASS 451-600					
Alco	H. F. Grant	4¾	5½	460	1:02.1
EVENT 18, FREE-FOR-ALL					
Alco	H. F. Grant	4¾	5½	460	1:01.2
Thomas Flyer	John J. Kingsley	5½	5½	K	1:04.8
EVENT 19, RECORD OF HILL					
Fiat	Caleb Bragg	5⅛	7⅜		1:00.3
Alco	Harry F. Grant	4¾	5½	460	1:01.8
Stanley steamer	Fred H. Marriott	4½	6½		1:09.1
EVENT 20, AMATEURS					
Thomas Flyer	John J. Kingsley	5½	5½	K 1910	1:05.8
Lancia	Nelson Slater	3¾	4⅜	1909	1:33
EVENT 21, EXHIBITION					
Babcock electric	F. A. Babcock, Jr.			12	3:00.9



MACADAM ROADS ARE GOOD NEAR STAUNTON, VA. PACEMAKER NEAR NATURAL BRIDGE

For Second Time Motor Horn Rallies

ATLANTA, GA., June 6—Special telegram—With a fire wagon's siren tooting at one end of the line and a band mounted on a motor truck playing at the other, the Atlanta to New York tourists got away from here this morning on the long pull over the national highway from Broad street to Broadway. The roads were vile. Rain fell in this section of Georgia all of Sunday afternoon and until early Monday morning. When rain falls on Georgia clay roads they become slippery as oil. Save for wet roads the conditions hardly could have been better for the start of the Journal-Herald run. The getaway was set for 8:30 and by 7:30 the first car was in line. But even before that crowds had begun to assemble, for a motor run has an edge on a circus parade.

The tourists were assembled on seven blocks, and at the head of each block was stationed a man to set the line in motion. With rare promptness the cars assembled, took their places and awaited the signal. A squad of mounted police drew up on Alabama street near Whitehall. Further up the street was placed the checkers' car. There was not room for it in the street, so it was run up on the sidewalk. Just across the street on a big truck the band was located, which played steadily, until the last of the cars was sent away. The Reo checkers' car was first away. Then came the Columbia pacemaker. And as each car swept down Alabama street, turned into Whitehall and then dashed over the viaduct into Peachtree street there were cheers. But they were feeble compared with what was to follow.

At 8:29 o'clock Beaumont Davison's Packard, No. 1 in the tour, wheeled up before the checkers' car. The mounted police wheeled into line in front of it. Then came the fire chief's wagon, in which

FIELD OF CARS COMPETING IN NATIONAL GOOD ROADS TOUR

1—Beaumont Davison.....Packard Atlanta, Ga.
2—W. J. Stoddard.....National Atlanta, Ga.
3—Col. J. J. Woodside.....Thomas Atlanta, Ga.
4—R. E. O'Donnelley.....Packard Atlanta, Ga.
5—Joseph F. Gatins, Jr.....Knox Atlanta, Ga.
6—Edward M. Durant....Pope-Toledo Atlanta, Ga.
7—W. S. McNeil, Jr.....Lambert Atlanta, Ga.
8—Regal Motor Car Co.....Regal Detroit, Mich.
9—W. T. McNinch.....Lambert Atlanta, Ga.
10—Atlanta Motor Car Co..White Star Atlanta, Ga.
11—Jackson P. Dick.....Am. Traveler Atlanta, Ga.
12—Maxwell-Briscoe Motor Co Maxwell New York, N. Y.
13—Edward H. Inman.....Simplex Atlanta, Ga.
14—C. W. Dupre.....Maxwell Marietta, Ga.
15—Charles I. Ryan.....Columbia Atlanta, Ga.
16—W. E. Wimpy.....Buick Atlanta, Ga.
17—J. H. Marsteller.....Chalmers Roanoke, Va.
18—Forest Adair.....Stevens-Duryea Atlanta, Ga.
19—E. M. Willingham.....Ford Atlanta, Ga.
20—N. W. Wallace.....Hupmobile Charlotte, N. C.
21—P. S. Arkwright....Pope-Hartford Atlanta, Ga.
22—A. Burwell, Jr. Firestone-Columbus Charlotte, N. C.
23—Brush Automobile Co.....Brush Atlanta, Ga.
24—Kelly-Knight Motor Car Co... .....Kisselkar Atlanta, Ga.
25—Arthur T. Smart.....Speedwell Atlanta, Ga.
26—Georgia Motor Car Co.....E-M-F Atlanta, Ga.
27—Mrs. Elizabeth A. de Giers Thomas New York, N. Y.
28—E. D. Crane & Co ....Firestone-Columbus Atlanta, Ga.
29—W. D. Alexander. Stoddard-Dayton Atlanta, Ga.
30—Asa G. Candler, Jr.....Lozier Atlanta, Ga.
31—Maxwell-Briscoe Co.....Maxwell Tarrytown, N. Y.
32—John W. Grant.....Locomobile Atlanta, Ga.
33—E. D. Crane & Co.....Hupmobile Atlanta, Ga.
34—T. H. Cooper.....Corbin Salem, Va.
35—C. H. Johnson.....Stevens-Duryea Atlanta, Ga.
36—Georgia Commission Co .Halladay Albany, Ga.
37—John Moore & Co.....Brush New York, N. Y.
38—Herman J. Haas.....Winton Six Atlanta, Ga.
39—J. E. Brown.....Selden Atlanta, Ga.

MACHINERY USED BY SOUTHERNERS IN MAKING ROADS

GEORGIA PINES OUTSIDE ATLANTA

SCRAPING THE ROADS NEAR ROANOKE

Good Roads Forces of the South

were seated Fire Chief Cummings and Police Chief Jennings. Exactly on the tick of 8:30 Honorary Starter Robert Maddox, mayor of Atlanta, fired a pistol. This was the signal for activity on the part of the fire wagon's bell and siren. In a few seconds more the noise was taken up by the big bell at fire headquarters. This was the tip to the factories and their whistles and bells soon roared, and such another noise hasn't been heard here since the New York-Atlanta tour rolled in last November. As the noise began the police wheeled into Whitehall and at an easy gallop sped out Peachtree street. Then came the fire wagon, screeching merrily. Behind it was the Packard No. 1. In another minute Stoddard's National, of local hill-climbing and speedway fame, had checked out and joined the procession. John J. Woodside's Thomas soon followed and car after car, as they were released from the flag-decorated checkers' station beat it along and joined the procession.

Every inch of the way for miles the streets were lined and cheering was continuous. At Ponce de Leon avenue a mile or so from the start, the mounted police wheeled out of line. The fire machine continued on to Brookwood bridge and there dropped out. For an hour cars poured across Brookwood bridge and there dropped out. For an hour cars poured across Brookwood bridge and out onto the long, broad and somewhat slippery national highway that stretches from the New York of the south to New York itself. Exactly seventy cars ran out of Atlanta, headed for Broadway. Of this number eight were official cars and sixty-two were contestants. Only seven cars that entered were scratched. Two hundred and sixty-six people were in the tour when it left Atlanta.

The cars entered represent twenty-seven

OWNERS IN ATLANTA-NEW YORK HIGHWAY DEMONSTRATION

40—S. M. Smith.....Speedwell
Bluefield, W. Va.
41—Dr. E. C. Seawright.....Ford
Fayetteville, Ga.
42—C. D. Smith.....Jackson
Albany, Ga.
43—Julian H. Reynolds.....Maxwell
Augusta, Ga.
44—L. S. Brown.....Mitchell
Athens, Ga.
45—Roy Collier.....Thomas
Atlanta, Ga.
46—Mercer Automobile Co.....Mercer
Trenton, N. J.
47—W. G. Humphrey.....Pullman
Atlanta, Ga.
48—Ohio Motor Car Co.....Ohio
Cincinnati, Ohio.
49—Pullman Motor Car Co....Pullman
York, Pa.
50—Carter & Logan Brothers.....Cole
Savannah, Ga.
51—A. P. Herrington.....Reo
Atlanta, Ga.
52—Robert Campbell .....Oakland
Cedartown, Ga.
53—D. K. McColl.....Cadillac
Bennettsville, S. C.
54—J. L. Henderson...Stevens-Duryea
Hampton, Ga.
55—M. L. Thrower.....Ohio
Atlanta, Ga.
56—Marcellus Rambo.....Columbia
Birmingham, Ala.
57—Good Roads Committee...Mitchell
Winston-Salem, N. C.
58—R. D. Apperson.....Palmer-Singer
59—R. G. Scruggs.....E-M-F
Waycross, Ga.
60—W. P. Walthall.....Moon
Atlanta, Ga.
61—Gaston Gunter.....White gasoline
Montgomery, Ala.
62—W. H. Peacock.....Cadillac
Cochran, Ga.
63—Mrs. Myrtle M. Barnes.....
.....Stevens-Duryea
Montgomery, Ala.
64—L. S. Collier.....Buick
Atlanta, Ga.
65—Charles T. Smith.....Maxwell
Concord, Ga.
66—Edwin P. Ansley...White steamer
Atlanta, Ga.
67—Emmet Callan.....Maxwell
Washington, Ga.
68—F. J. Cooledge.....National
Atlanta, Ga.
69—John W. Mangham.....Columbia
Griffin, Ga.

OFFICIAL CARS.

James R. Gray.....Pierce-Arrow
Atlanta, Ga.
Maj. John S. Cohen...White gasoline
Atlanta, Ga.
R. H. Johnston, White Co.....
.....White steamer
New York, N. Y.
Matheson Automobile Co. Matheson Six
New York, N. Y.
Ray M. Owen, R. M. Owen Co....
.....Reo roadster
New York, N. Y.
Columbia Motor Car Co. Welch-Detroit
New York, N. Y.
A. D. Corwin, Buick Motor Co....
.....Welch-Detroit
New York, N. Y.
Ajax-Grieb Rubber Co.....Lozier
New York, N. Y.

CONVICTS ARE EMPLOYED IN MAKING SOUTHERN HIGHWAYS

towns and cities, in eleven states. Forty-two makes of cars were in the lot. The start was faultlessly arranged. The plans that have been months in the making were finally thrashed out at a meeting of the entrants held Saturday at the Piedmont hotel. Charles Jerome Edwards, referee of the tour, addressed this meeting and explained the rules. Plans were crystalized at this meeting that made the start a success and that seemed to promise big things for the whole tour.

Before the tracks of the tour had been half obliterated from the mud of Fulton county reports of accidents began to trickle back. John W. Grant's car had gone into a ditch. Nobody was hurt, but a wheel was lost. J. T. McNinch's car exactly duplicated that feat. Two cars were out for awhile at Duluth, Ga., with broken springs. Once out of the mud districts, however, the tour should roll smoothly up through the south and on into New York.

First Day On Road

Anderson, S. C., June 6—After a day of ovations in every hamlet and town between here and Atlanta the New York Herald-Atlanta Journal tourists are in Anderson tonight. There were no serious accidents. The day could not have been improved upon, and the roads were in excellent condition despite the showers of yesterday and the night before.

Several cars had tire trouble, the Locomobile of John W. Grant skidded into a ditch and broke a spring 44 miles from Atlanta, and two Maxwell cars, that of Charles T. Smith, of Concord, and that of Emmet Callan, of Washington, Ga., had accidents to their springs and were placed temporarily out of commission.

Car No. 9, a Lambert, in which were J. T. McNinch, a tin and iron dealer of Atlanta, and Miss McNinch, broke a wheel 34 miles from Atlanta and had not got into Anderson late tonight.

The cars are all parked in the beautiful plaza in front of the Hotel Chiquola tonight, and most of the tourists attended an entertainment at Buena Vista park provided by the citizens of Anderson. The principal feature of the entertainment was an old-fashioned cakewalk, participated in by some of the most skilful negro dancers in the south.

The tourists had hardly passed beyond the noise of the cheering of the thousands of Atlanta citizens when they began running through solid lines of people from Norcross to the small towns in the vicinity. Farmers' teams were drawn up in the crossroads, men, women and children lined the sidewalks and motor cars were banked along the curbing.

Just beyond the Atlanta limits the tourists were greeted by the shrieking of steam roller whistles. A hundred negro laborers along the road cheered until their voices were hoarse.

Norcross citizens did themselves proud. At the edge of the town hung a huge sign on which was painted in letters that could be read a mile away, "Speed limit 110 miles." Committees of citizens were on hand to present refreshments to the tourists, but because of the long ride that had to be made during the day none of the cars could stop. Duluth welcomed the tourists with blasts from a steam whistle, and this whistle incidentally notified hundreds who were gathered in the center of the town of the approach of the cars. It was in Duluth that the Maxwell cars met with their spring accidents, and there under the care of local blacksmiths and of their own drivers and owners they remained until repairs were completed.

Outside of Winder the Velie had some motor troubles and lost considerable time. The Columbia pacemaker which made the recent pathfinding trip from New York to Atlanta and return over the national highway, reached Commerce, Ga., the noon control, at 15 minutes after 1 o'clock, and was followed soon after by most of the other cars.

Commerce citizens have been planning for weeks for the reception of the tourists,

FLANDERS CAR THAT IS RUNNING FROM CANADA TO MEXICO

Many in Carolina Endurance Run

RICHMOND, VA., June 7—In the Carolina endurance run from Richmond, Va., to Raleigh, N. C., and return twenty-five cars will take part. This is the second contest given by the Times-Dispatch, of Richmond ,in the interest of good roads in Virginia and North Carolina. The twenty-five cars entered will carry about eighty-five passengers, of whom about twenty-five will be wives and daughters of the contestants. The route selected is a most picturesque one, a number of rivers being crossed and many places of historic interest passed. The road from Richmond to Petersburg is in splendid condition and after crossing the Appomattox river, through Petersburg and to the Greensville county line, fairly

and they gave them a welcome today that they will long remember. On the lawn of Dr. L. G. Hardman, one of the fathers of the prohibition bill in Georgia, luncheon was served by women of the town's leading families. The women who were on the tour were cared for by committees of Commerce women at the home of Mr. and Mrs. E. B. Anderson.

The new road leading from Carnesville, which was hurried so as to be ready for the tourists, was as smooth as a billiard table, and all the way along it were people who waved sunshades and flags, threw bouquets into the cars and cheered every car that passed.

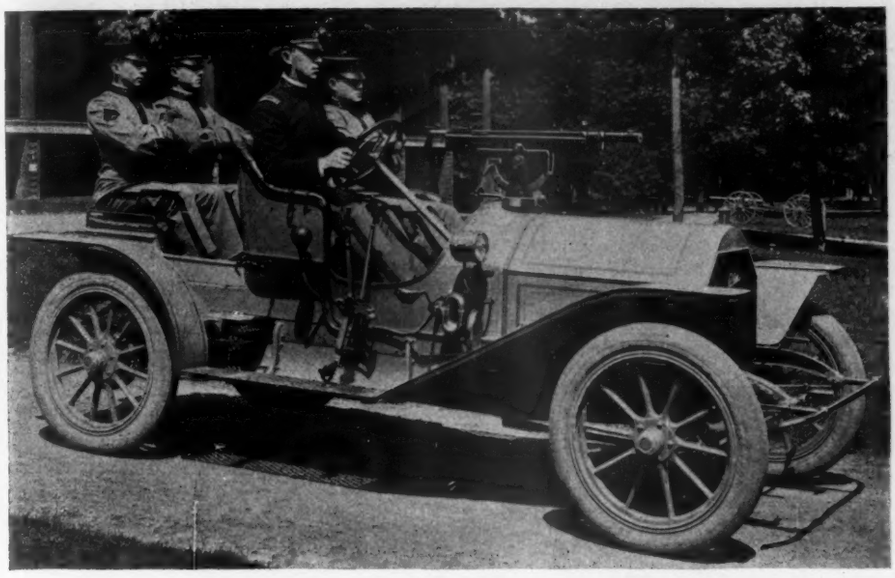
Penalties exacted for the first day's running were: No. 21, 50 points; No. 25, 43 points; No. 42, 77 points; No. 55, 125 points; No. 65, 77 points. Up to midnight Nos. 32, 47, 9, 44 and 67 had not arrived.

From Anderson to Charlotte

Charlotte, N. C., June 8—The common accord of the tourist's voices is a single sentiment. It has for its plaint the fact that Charlotte has done itself so proud and offered such a wide diversity of entertainment that it was a mistake to so fix the itinerary that the tour could not linger there for at least another day. The run from Anderson to Charlotte was one of consuming interest. There was but one accident of moment, and that involved the Stevens-Duryea car which belonged to Mrs. M. L. Barnes, of Myrtle, Ala., which smashed a front wheel. Mrs. Barnes is making a strenuous effort to have the wheel replaced by a new one which will have to come from Greenville.

Along the route at every point of vantage, grand stands are erected, some of which were improvised out of farm wagons, others in divers hasty ways, but they were all decorated and occupied, the women in their best, the children in Sunday garb, all provided with ammunition in the form of flowers with which they pelted the participants of the contesting cars as they trailed along maintaining a fixed alignment and gracefully accepting the tribute.

Field is Named For Glidden Tour



MILITARY CADETS IN CADILLAC ENTERED IN GLIDDEN TOUR

NEW YORK, June 8—More cars are entered for this year's national tour of the American Automobile Association from Cincinnati to Chicago via Dallas, Tex., than competed in last year's Detroit-Chicago-Minneapolis-Denver-Kansas City trip. The margin is not a wide one, though—not more than three or four at the outside. Whereas there were thirteen in the Glidden, thirteen in the Hower and three in the Detroit in 1909, there are booked so far this year nineteen in the Glidden, twelve in the Chicago, three non-contesting and seven officials' and press cars. This gives twenty-four makes of cars on the tour, of which nineteen are in competition.

As revised to date by Chairman Butler, of the A. A. A. contest board, the entry list is as follows:

Glidden—1, Premier; 2, Premier; 3, Premier; 4, Chalmers; 5, Chalmers; 6, Cole; 7, Maxwell; 8, Cartercar; 9, Parry; 10, Glide; 11, Ohio; 12, Ohio; 14, Pennsylvania; 15, Cino; 16, Buick; 17, Buick; 18, Oakland; 19, Oakland.

Chicago—100, Moline; 101, Moline; 102, Moline; 103, Lexington; 104, Cole; 105, Parry; 106, Falcar; 107, Maxwell; 108, Cartercar; 109, Cartercar; 110, Lexington; 111, Westcott.

Non-contestants.—Cadillac, Cadillac, Rapid.

Official—Columbia, Reo, Chalmers, pilot.

Press—Chalmers, Cutting, Cutting, Maxwell.

All the contesting cars in the tour are expected to be turned over to the technical committee at Cincinnati for examination. Most of the contestants themselves will arrive Sunday and Monday, so that everything will be in readiness for the official start Tuesday.

Nashville's Glidden Plans

Nashville, Tenn., June 5—Glidden tourists will be given one of the most pleasant receptions possible and will be royally entertained by Nashville motorists. James E. Palmer is chairman of the committee in charge and is now arranging the details of the program. The tourists will be met somewhere over the Kentucky state line and when they leave Nashville will be escorted south. While here there will be various forms of entertainment, including a trip to the Hermitage, the home of Andrew Jackson. President H. F. Smith, of the Nashville Automobile Club, has received word from Birmingham that about twenty-five cars will be up from that city to escort the tourists from Nashville to the Alabama points on the route.

CLIMB AT PORTLAND

Portland, Me., June 6—Maine now takes rank with other states, for it has had a real motoring contest. Saturday saw a regulation hill-climb with about fifteen cars entered. Fast time was made, the course was in perfect condition and not an accident of any kind marred the sport of the day. The exact length of the course was .85-mile. Buick cars captured the heavy part of the honors and took three first places in the four events in which they were entered. The Ford, Inter-State and Palmer-Singer were the other prize winners. It was a strictly stock car contest with the drivers men who had to have been residents of Cumberland county on May 1. Summaries:

CLASS A, 20 HORSEPOWER OR UNDER

Car	H.P.	Driver	Time
Hupmobile	16.9	C. E. Woodbury	2.47

CLASS B, 20 TO 30 HORSEPOWER

Buick	28.0	R. P. Swan	1.27
Ford	22.5	C. C. Hill	1.34½
Ford	22.5	A. M. Spear, Jr.	1.37
Maxwell	28.9	M. S. Falkins	1.45
Johnson	28.9	Arthur Brant	1.53
Oakland	25.6	P. T. Stoughton	1.59

CLASS C, 30 TO 40 HORSEPOWER

Inter-State	32.5	Rosco Willard	1.31¾
Oakland	32.4	James Meader	1.32½

CLASS C, SPECIAL

Buick	32.0	R. P. Swan	1.19¼
Speedwell	40.0	Arthur Brant	1.38

CLASS E, OVER 50 HORSEPOWER

Palmer-Singer	57.0	Perry Frost	1.22¾
Thomas Flyer	53.4	A. T. Baker	1.30

CLASS F, FREE-FOR-ALL

Buick	28.0	R. P. Swan	1.17¾
Thomas Flyer	53.4	A. T. Baker	1.20
Speedwell	40.0	Norman Craig	1.23¼
Oakland	25.6	P. T. Stoughton	1.24½
Palmer-Singer	57.0	Carroll Brown	1.26½
Ford	22.5	A. M. Spear, Jr.	1.28
Ford	22.5	C. C. Hill	1.28
Buick	32.0	R. P. Swan	Withdrawn

CLASS G, SLOW RACE

Ford		A. M. Spear, Jr.	6.57
Inter-State		Roscoe Willard	6.52¾
Johnson		Arthur Brant	6.49
Buick		R. P. Swan	6.37½
Ford		C. C. Hill	6.18
Oakland		James Meader	5.25
Maxwell		M. S. Folkins	4.12½
Buick		R. P. Swan	Stalled
Oakland		P. T. Stoughton	Stalled
Speedwell		A. Brant	Withdrawn
Speedwell		N. Grant	Withdrawn

SENTINEL CUP BLANK OUT

Milwaukee, Wis., June 6—Official entry blanks for the Wisconsin State Automobile Association reliability contest for the Milwaukee Sentinel trophy on July 18, 19, 20, 21 and 22, have been issued by George A. West, chairman of the special contest board. The contest will be held under sanction No. 156 of the A. A. A., and the rules and regulations of the contest board of that organization. The entrance fee is $50 per car. Entries must be sent to Mr. West at 1215 Railway Exchange building, Milwaukee, before midnight of July 12.

TIME TRIALS IN ALGERIA

Paris, May 25—The annual kilometer speed trials for the trophy offered by the governor of Algeria resulted in the winning of the four-cylinder 3.9 by 6.3 Darracq of Marce-Metrot, which covered the course in :38⅘, averaging 58½ miles an hour upon a road which was in no shape for a speed trial. Vinson's two-cylinder 3.2 by 6.7 Lion-Peugeot was second fastest, its time being :39⅗. The six-cylinder 3.9 by 6.3 Renault stock car took third place in 41 seconds. All told sixteen cars started in the affair, which excited the liveliest interest.

good roads are found; and when this is passed the best roads in Virginia are reached. The Roanoke river is crossed by a fine steel bridge at Roanoke Rapids—and from here the road stretches like a white ribbon to Panacea Springs. The second day the roads are equally as good, the cities of Warrenton and Henderson being visited, as well as Wake Forest college and the Falls of the Neuse, the night being spent at Raleigh, N. C. On the third day the course will extend through Durham and on to Chapel Hill, where a brief stop will be made to allow a visit to the University of North Carolina. The return to Durham is made over a fine stretch of macadam pike, and at that city Mayor Griswold will entertain the party with luncheon. Oxford will then be visited and re-crossing the Roanoke river, the night will be spent at Clarkesville, where the entire population has extended an invitation of hospitality. The last day will include the old Boydton plank road, a unique stretch, Boydton, South Hill, Lawrenceville, Petersburg, and the return to Richmond, the cars reaching the starting point before 5 p. m.

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The Motor Car Not An Economic Waste

WHEN J. T. Talbert, in his address before the Bankers' Association of Texas, denounced the motor car as being one of the great economic wastes of the country and classed it as a non-productive industry and which industry, according to him, is nothing more or less than a parasite consuming the diminishing surplus of the products of the country, he apparently failed to analyze the industry with any object of finding anything good in it, and viewed it solely as a needless and most expensive luxury which is today working damage to thousands of citizens. This tirade coming from a banker and delivered before a bankers' association of what gives promise of being one of the greatest motor car absorbing states in the union has brought about an acute situation, in that thousands, who through the daily press have read the tirade, may, unless the motorists present the real facts clearly, conclude that the motor car is a needless luxury and that the industry is as nonproductive as a standing army, which is a comparison Mr. Talbert made use of in his address.

IT is impossible to understand from what viewpoint Mr. Talbert was examining the motor car industry when he classed it as a non-productive one and one, to use his own words, in which "the thousands of young and able-bodied men employed in manufacturing cars and in running cars are withdrawn from productive usefulness and become consumers of our diminishing surplus products, and constitute an added burden to the producers." If the motor car industry is a non-productive one, then all like industries are non-productive. The motor car is as essential a means of transportation today as is the railroad train, the ocean steamer, the street car, the elevated train, or the horse-drawn vehicle. If the motor car industry is a non-productive one, and if the able-bodied men engaged in it are withdrawn from productive usefulness, then every person engaged in the manufacture and operation of railroad locomotives, passenger coaches, Pullman cars, street cars, subway cars, elevated cars, horse vehicles of every sort, lake steamers, etc., are also withdrawn from productive usefulness, and a great army of manufacturers engaged in manufacturing and operating these different vehicles of transportation are as unproductive as the members of a standing army in times of peace. Mr. Talbert has apparently overlooked entirely the fact that the progress of the world has ever been and ever will be commensurate with the progress made in transportation. The great aim and goal in transportation is the reduction of the time factor. The bicycle would never have been introduced had it not offered a speedier method of individual locomotion than existed at that time and because it afforded a means that was preferable to horse-drawn vehicles in the minds of great masses. The motor car would never have been introduced had it not offered a speedier and more comfortable method of locomotion than is possible with horse-drawn vehicles. So it is with every new means of locomotion. It offers advantages over past methods, advantages which sooner or later appeal to practically the entire community.

THE motor car is a phenomenal economic factor in the country. Any means whereby the earning capabilities of a producer are increased becomes an economic factor in the development of that country. This is a recognized law in national economy. Adams Smith, in his "Wealth of Nations," places as one of the basic principles of national economy the increase in productiveness of the individual. This increase was early seen in the division of labor by reducing every man's business to one operation, and making this operation his sole employment, thereby necessarily increasing the dexterity of the workman and making him a greater producer. This increased production is accomplished without in any wise increasing the consumption of individual stamina or energy, and so has been considered a great economic advantage. So with the motor car. It is an economic factor because it increases the productiveness of the individual. Those who fail to see the real merit of a motor car will naturally want to know how it increases the productiveness of the owner. This is readily answered by taking the case of any practicing physician who employs his motor car to visit patients, instead of his discarded horse-drawn vehicle. Physicians in every state in the union admit that their earning powers have been in some cases quadrupled by the motor car. Their value as individuals has been increased because of the time saved by means of swifter transportation and also by means of increased health, due to shorter hours, alone made possible by the motor car.

THE case of the motor car, adding to the productiveness of the individual in the case of the physician, is but one of the many examples. Take the case of the contractor with his stone quarry, who with the aid of his motor car is enabled to more than double his usefulness viewed from a point of time only, but whose individual work is greatly accentuated because of the closer supervision it is possible to give to the different departments of his work. It is an acknowledged fact that the motor car is an agent for good health, and so is directly responsible for a great increase in the producing ability of the individual. It is healthier to the citizen to go to his work in his car in the open air than it is in the ill-ventilated smoker on the steam railroad, the elevated train, or the subway. It is a fact that in large cities it was impossible for citizens to get in the open air of the country with horse-drawn vehicles, whereas the motor car brings the country to within a half hour's ride of the business center, or the residential district. This great trend towards increasing the bodily condition of producers is one vast factor of importance in the national status of the motor car.

CRITICS of the motor car from a manufacturing point of view have failed to realize the great educator it has been with all citizens at the present time. The advent of the bicycle started an education in mechanics throughout the entire nation. Through the two-wheeler the public was introduced to the question of lubrication, to ball bearings, to pneumatic tires, and a score of other mechanical features in connection with the car. What was learned in conjunction with the bicycle has proven but the kindergarten to the motor car, in which the driver has to contend with a complete electrical system, a most efficient lubricating system, the laws of gases as applied in carburation, and a dozen other systems of mechanics. What has been the result of this on the minds of the people? This is essentially an age of science; our colleges have drifted away from the Latin curriculum, giving precedence to the scientific course, because of the widespread national demand for men with a good scientific education. In this light there are few other industries which are closer to the real requirement of the nation today than the motor car. The car has been directly responsible for a great awakening in mechanics among the masses, which is having its direct effect today. In the factory the accuracy of construction needed has brought about a delicacy of measurement and care in selection that is a highwater mark in manufacture .

PACE SHOWN BY ALL CARS AT INDIANAPOLIS

Compilation of Data of Recent Speedway Meet Furnishes Racing Information of Interest

INDIANAPOLIS, IND., June 6—Having successfully run its first race meeting of the present season the Indianapolis Speedway Co. now is busily engaged in preparing for the next session, which is to be held on and around the national holiday and which will have for its feature the Cobe cup event which is scheduled for the Fourth. The recent meet was most satisfactory in every respect, and Carl Fisher and the others are much encouraged in that it was amply demonstrated that brick makes a very superior surface for speedway racing. Since the meet statisticians have been compiling interesting dope which shows just how fast the track is. Not only did Oldfield in the Benz smash the 1-mile speedway record, lowering it to :35.63, but the other cars as well ran remarkably fast. The figures show that in the twenty-four competitive events on the card for the 3 days, 181 cars took part, traveling a total distance of 4,162 miles at an average speed of 57.7 miles per hour. The distance of the twenty-four events was 510 miles and the winners of these averaged 72.44 miles per hour.

With these figures in hand one can draw comparisons with the 1-mile board track at Los Angeles, where sixteen races were run, the total distance of which was 581 miles. Counting the time trials, the distance was 735 miles and the average pace of the competing cars was 70.44 miles per hour. However, this general average is brought up to 75.99 miles per hour by the remarkable pace shown in the time trials in which the average was 92.01 miles per hour. But one should remember when making comparison between the two tracks that twice as many cars competed at Indianapolis as did at Los Angeles, and that the coast meet attracted larger cars than did the session in Hoosierdom. Indianapolis also suffered in this general compilation by tire troubles, which, of course, figured largely in the general time results. Los Angeles had three long-distance races, two of which were at 100 miles each and the other a 2-hour race in which 148 miles was covered, while Indianapolis had one race of 50 miles, another at 100, and a third at 200, the general total being 348 for Los Angeles, and 350 for Indianapolis.

FRENCH TO TRY SEALED BONNET

Paris, May 25—During the first half of the month of August France will hold its first reliability trials with the bonnets of all cars sealed. It is not the first occasion on which purely commercial models have been put to the test, for there was a reliability trial last year, on which occasion half a dozen came through without penalization. In order to reduce the number of clean scorers to the lowest possible figure, and at the same time thoroughly test the cars, it has been decided to make the conditions more rigorous than ever before. The sealed bonnet competitors will have to cover about 2,800 miles on 15 consecutive days—making an average of about 186 miles a day—at an average speed of 18½ miles an hour without any involuntary stop on the road, except for changing tires, practically Glidden tour conditions. When the start is given from the official garage each morning, the motor must be running within 5 minutes, under pain of penalization, and must not be stopped for any cause whatever until the official time for checking in. If the run is made at a faster average than 18½ miles an hour, the car must stop outside the garage with its motor running until the official time for entering. Even when tires are being changed the motor must continue to run, and gasoline and oil must be taken on board during the running time.

The event is open only to the smaller types of pleasure cars now so popular in Europe, all of which must be absolutely standard and fully fitted for touring, with not fewer than two seats, one of them to be occupied by an observer appointed by a rival firm. There are three classes, for respectively one, two and four-cylinder cars, the maximum cylinder dimensions in each class to be 4.7 by 5.9 inches bore and stroke for the one-cylinders; 3.9 by 5.5 inches for the twins and 3.1 by 5.1 inches for the four-cylinder models. Three cars per firm can be entered in each class.

As a rule runs will be started from an official garage in the neighborhood of Paris, and a return made to the same place, where the cars will be immediately locked up until next morning. In order to visit more distant towns, there will be one or two exceptions, a night being spent on the road and a return made to Paris the next day. Indications are that all the leading small-car manufacturers of France will take part in the trials, and that there will be adequate representation from England.

FASTEST TIME BY NAZZARO

Turin, May 25—Nazzaro, in a Fiat, was the winner of the meeting of Modena, which was held a few days ago. There was one contest only on the program, a mile to be covered twice or both ways, from a flying start. There were eight classes of cars, with one heat as a free-for-all. Nazzaro went the mile in respectively :40⅘ and :41⅕, the wind being against the contestants in the return trial. The average time was :41, or at the rate of 86.8 miles an hour. This is the fastest time for a mile ever made in Italy, from a flying start and for stock cars.

The second best time was made in the free-for-all by Aurora in an Isotta. The average time was :47 1-10 or at the rate of 76.3 miles an hour. In the class of cars with 3.1 inches bore a Fiat won in 1:04, averaging 56.3 miles an hour; in the class with 3.3 inches bore an S. P. A. won in 1:02, averaging 58 miles an hour. A S. C. A. T. was the winner in the class where the bore was not over 3.5 inches, the time being 1:08⅘, or at the rate of 54.4 miles an hour. Vincenzo Lancia drove his own car, a Lancia, to the winning post in the class for cars with 3.9 inches bore. His time was :51 for the mile, or at the rate of 70.6 miles an hour. A Fiat won in the class for cars with 3.7 inches bore in :51⅕ or at the rate of 70.3 miles an hour.

Coming Motor Events

June 11—Annual Giant's Despair hill-climb, Wilkes-Barre, Pa.
June 11—Road races of Portland Automobile Club, Portland, Ore.
June 14—Start of Glidden tour from Cincinnati.
June 17—Track meet at Memphis, Tenn.
June 18—Track meet of Quaker City Motor Club, Philadelphia.
June 18—Automobile Club of Maryland's hill-climb, Baltimore, Md.
June 18—Hill-climb of Upper Westchester A. C., Ossining, N. Y.
June 28-29-30—Three-day reliability run of St. Louis Automobile Manufacturers and Dealers' Association for Star trophy.
July 1-2-4—Speedway meet at Indianapolis.
July 1-10—Road carnival of licensed dealers at Los Angeles, Cal.
July 2—Reliability run of North Wildwood Automobile Club, Philadelphia.
July 4—Track meet of Motor Club of Wildwood, N. J.
July 4—Track meet of Dallas Automobile Club, Dallas, Tex.
July 4—Track meet of Cheyenne Motor Club, Cheyenne, Wyo.
July 4—Hill-climb of Automobile Club of Auburn, Auburn, N. Y.
July 4—Track meet of Minnesota State Automobile Association, St. Paul.
July 11—Hill-climb of Plainfield Automobile Club, Plainfield, N. J.
July—Hill-climb at Richfield Springs, N. Y.; middle of month.
July—Road race of Grand Rapids Automobile Club, Grand Rapids, Mich.; middle of month.
July 18-23—Milwaukee Sentinel trophy. Tour of Wisconsin State Automobile Association.
July 30—Track meet of North Wildwood Automobile Club, Wildwood, N. J.
August 1—Reliability run of Minneapolis Automobile Club, Minneapolis, Minn.
August 1-September 15—French industrial vehicle trials.
August 4—Annual hill-climb of Chicago Motor Club at Algonquin, Ill.
August 15—Start of Munsey tour.
August 17—Track meet at Cheyenne, Wyo.
August 31—Reliability run of Minnesota State Automobile Association.
September 2-3-5—Speedway meet at Indianapolis.
September 3—Reliability run of North Wildwood Automobile Club, Wildwood, N. J.
September 5—Track meet at Wildwood, N. J.
September 5—Track meet at Cheyenne, Wyo.
September 5—Speedway meet at Los Angeles, Cal.

Defense of the Motor Industry

By Benjamin Briscoe

I BELIEVE a gross injustice has been done by the recent speech of J. T. Talbert, of the National City bank, New York, before the Texas Bankers' Association, El Paso, Tex., recently. Mr. Talbert's speech, the part of which referring directly to motor cars is quoted herewith, describes the car as one of the greatest national wastes, his fundamental reason being that the motor car is essentially for pleasure. According to Mr. Talbert, "we are squandering on pleasure vehicles annually sums of money running into hundreds of millions of dollars. The initial cost of cars to American users amounts to not less than $250,000,000 a year. The upkeep and other necessary expenditures, as well as incidentals, which would not otherwise be incurred, amount to at least as much more. This vast sum is equivalent in actual economic waste each year to more than the value of property destroyed in the San Francisco fire—perhaps twice as much."

Mr. Talbert then continues with particular reference to the country's extravagance, which, he claims, has arrived at the point of wastefulness, where both nation and individuals have forgotten to be thrifty and the extravagance is leading to the day of reckoning, etc., etc.

If Mr. Talbert is correctly quoted, I desire to take issue with him most decidedly, in so far as it expresses the opinion that the expenditure for cars represents an economic waste.

It seems incredible to me that one versed in economics and finance should indulge in such a thoughtless and illogical diatribe against the development of one of the foremost industries of our country; an industry that is founded upon as solid an economic demand as exists in any industry whatever, excepting the demand for food and clothes.

It is also a fact that the production and distribution of food is largely increased on account of the car because the farmer can save so much time by its use. The thoughtless expressions of prominent men can do a great deal of harm. I have seen editorials and comments, for instance, on this speech of Mr. Talbert's, in several publications, and the speech was undoubtedly copied.

The man who reads the newspapers can be said to be "reading as he runs," and while the fallacy in the inference of the paragraph I refer to is so evident that it could hardly escape discovery, even if "read on the run," yet there are some hundreds of thousands of people who have read it and who did not stop to think that it was a thoughtless expression of what might be termed surface economics.

That we may get a little deeper than Mr. Talbert did, let us see just what the car industry is.

EDITOR'S NOTE—James J. Hill, Chancellor Day and Joseph T. Talbert, respectively railroad magnate, lawyer and banker, have of late delivered addresses in which they have charged the motor car with having made the American people extravagant. Mr. Talbert, who is a prominent New York banker, made his address at the bankers' convention at El Paso, Tex., which has been replied to by Benjamin Briscoe, president of the United States Motor Co. Mr. Talbert's remarks on motoring were as follows:

Another and more recent example of our refusal to take heed of the "signs of the times," and of our apparent reliance upon blind faith that because Providence hitherto has protected us against our folly that we shall always enjoy the same protection, may be found in the fact that during the year following the panic of 1907 almost the only industry which suffered no serious setback was the one which among all others might have been expected to suffer most, because the very life of that particular industry depended upon continued indulgence in luxury and extravagance. I refer, of course, to the manufacture of motor cars. The fact the business of manufacturing motor cars grew by leaps and bounds during the years following the panic constitutes a powerful commentary upon the heedlessness of our expenditures and our lack of thrift. It seems that neither wars nor panics have power to check, far less to stop, our wastefulness.

We are squandering on pleasure vehicles annually sums of money running into hundreds of millions of dollars. The initial cost of motor cars to American users amounts to not less than $250,000,000 a year. The upkeep and other necessary expenditures, as well as incidentals, which would not otherwise be incurred, amount to at least as much more. This vast sum is equivalent in actual economic waste each year to more than the value of property destroyed in the San Francisco fire—perhaps to twice as much. The consequences of such enormous waste may be postponed for a time, but ultimately they must be faced and settled. Every dollar of property wasted or expended involves the consumption of so much of the product of human labor, and it stands to reason that it must be paid for.

This sum, as large as it is, does not include the whole economic loss growing out of this single item of indulgence. The thousands of young and able-bodied men employed in manufacturing machines and running and caring for cars, all are withdrawn from productive usefulness; they become consumers of our diminishing surplus products, and constitute an added burden to the producers. The economic influence of this withdrawal from the producing and addition to the consuming class is bound to be manifested in a tendency to higher prices. Its effect already must be considerable, and is comparable only to the maintenance of a standing army.

Thousands upon thousands of our people, frenzied by desire for pleasure and crazed by passion to spend, have mortgaged their homes, pledged their life insurance policies, withdrawn their hard-earned savings from banks to buy cars; and have thereby converted their modest assets into expanding and devouring liabilities. The spectacle is astounding.

I do not wish to be understood as singling out the motor car industry for attack. Far from it: for in my judgment when the froth has been scraped off and the business settles down to the complete development of the usefulness of the car commercially and as a motive power, its manufacture will become of the most valuable, as it is now one of the most profitable of our national industries. I decry neither the machine itself nor the business of making it, but as a means of pleasure it is very costly, and it is an extravagance except for those who are rich. I decry the use of the machine for purposes of pleasure by classes who must go into debt or give up their savings to indulge in that pleasure. The fact that it is done on such a scale offers a striking illustration of our national vice. In fact, it typifies our mania for spending beyond our means, and it is for this reason alone the illustration is used.

In 1909 there were made by motor car manufacturers of the United States, and sold to consumers largely in the United States, 120,000 cars approximately costing the individual buyers about $150,000,000. For 1910 the indications are that there will be sold to users about 180,000 cars, for which they will pay about $239,000,000. Separating the 1910 car production by their price value, I believe the following to be a fair approximation:

Cars ranging in price from	Number of cars 1910 production	Retailing at
$ 485 to $ 750.....	16,000	$ 8,800,000
751 to 1,000.....	49,000	41,650,000
1,001 to 1,250.....	58,000	64,000,000
1,251 to 1,600.....	22,000	33,000,000
1,601 to 2,000.....	8,000	14,000,000
2,001 to 3,000.....	15,000	36,000,000
Over $3,000	12,000	42,000,000

There is, therefore, a total estimated production of 180,000 cars at a price value approximating $240,000,000.

To get a correct idea of the "economics" involved, it is necessary to have these figures before us, because by having them we realize to how great an extent the motor car is coming to be a business vehicle, and because, generally speaking, all cars up to $1,250 are a very considerable part of the time used for business purposes; that is, as an aid in one way or another in production.

It is a conservative estimate to say that 80 per cent of the expenditure for the first three classes above named—and amounting to 133,000 cars at a selling value of $114,000,000—is an expenditure representing a commercial use, as tools or machinery of production. This being the case, Mr. Talbert can eliminate all but 20 per cent, or $23,000,000, of the above; that is, if he takes the stand that mere enjoyment is an economic waste.

It is safe to say that fully half of the use of the next two classes; that is, the class from $1,251 to $2,000, and from $2,001 to $3,000, is devoted to commercial use, a use which represents an improvement in the facilities for production. Mr. Talbert can, therefore, rightfully claim that if mere enjoyment, health-giving recreation, is economic waste, that $23,000,000 of the value of this class would be open to suspicion.

Now as to the two classes that are represented by the high-priced machine; that is, between $2,000 and $3,000, and over $3,000, we must admit that 75 per cent of the use of these classes of motor cars represents mere enjoyment and health-giving recreation—Mr. Talbert's economic waste—then we will have to add this expenditure to the expenditure for economic waste. Still, how many business men, bankers and professional men use these classes of cars to and from their business at a great saving of time with consequent enlargement of their producing value, even though it may be termed in one way the use of the vehicle for pleasure?

However, if enjoyment, if health, if happiness, and if diversion from the daily grind is economic waste, then Mr. Talbert is right to the extent, we will say, of $104,000,000, in this year 1910, of that kind of waste, added to which there would be, of course, the upkeep and maintenance cost. But what proportion of the depreciа-

Ably Handled by Benjamin Briscoe

tion on the $104,000,000 worth of cars plus the upkeep charge, is admitted to represent Mr. Talbert's kind of economic waste, is the world getting value received for in ways of health, of happiness and of convenience?

For instance, if transportation by horse-drawn vehicle, by trolley or by steam railway were used instead of transportation by motor car, would this use also be an economic waste; in other words, in order that the individual may not be extravagant, not be a party to this crime of economic waste, is it necessary for him to stay at home? The question then arises, what would he do if he stayed at home? It must be acknowledged that as a natural concomitant of human nature, mankind must have diversion. A popular form of diversion is the theater. If he stayed at home, therefore, would he go to the 5-cent theater around the corner? Would he indulge in economic waste to the extent of buying a book? Would he take a long walk and thus waste shoe leather?

So, when we come to think of it—even admitting that the depreciation on $104,000,000 of expenditure for cars this year can not be credited to economic usefulness; that is, Mr. Talbert's kind of economic waste—does it not simply take the place of other sorts of economic waste, such as buying books, going to the theater, wearing out shoes?

On the broad principle of economics, are we not better off by spending our money in the kind of economic waste that is conducive to the greatest enjoyment and the best health? What is civilization anyway, if not better knowledge of and opportunities for the individual to enjoy himself?

In the extract from Mr. Talbert's speech he uses the figure $250,000,000 and allows more for maintenance, expenses, etc., and as it is pertinent to assume that what Mr. Talbert means by economic waste is that which in no way adds to the facilities of production or aids production, let us see where Mr. Talbert's economics would get off:

Does life insurance aid production? There is no one who will not admit that life insurance is a beneficial development, one of the greatest institutions of the day. We can, therefore, safely turn to the statistical tables on life insurance, because whatever they say will be admitted by all men to represent economic usefulness.

These are the figures on thirty-five old line companies reporting to the New York insurance department:

Total income	$644,000,000
Total payment for losses, etc.	194,000,000
Total payment for surrendered policies, etc.	71,000.000
Total dividends to policy holders.	53,000,000
Total taxes, commissions and expenses	109,000,000
Total payments to policy holders.	319,000,000
Total disbursements	428,000,000

That is, while the total sum paid to the life insurance companies by their insurers was $644,000,000, the disbursements were $428,000,000.

To say nothing about the economics back of the total income figure, but just to take the difference between the total disbursements and the total income, we have $217,000,000, a splendid fund added to the resources of the companies to be sure, but an investment by the policy holders of this amount per annum must be, to say the least, as reprehensible an economic waste as would be the purchase of motor cars to this amount. True, a different set of people get the money, but that shouldn't alter the principle.

If we were to follow the dollar paid by the policy holder as premium, we would find it passing along to be used in many different ways. Yet, after all, it must be loaned to some one who will furnish other elements and make it produce.

Follow the dollar paid for a motor car and what becomes of it? It is also distributed for almost countless purposes. It is wages for working men; it builds their homes; it educates their children; it furnishes employment for almost every class and kind of mechanic; it circulates as lively when used in the car business as in any other business, except, perhaps, banking.

One gets on dangerous ground when one tries to express ideas on extravagance and endeavors to apply the principles of economics to the result.

Does the expenditure of $297,000,000 for furniture, fixtures and real-estate for state banks, loan and trust companies, savings and private banks in the United States represent economic waste? Does the support of the naval service and the cost of battleships represent economic waste? In 1910 there was $137,000,000 appropriated for this purpose. Do pensions represent economic waste? There were $161,000,000 appropriated for pensions? Does the purchase of adding machines by the banks represent economic waste? They can get along without them, surely.

What proportion of the cost of carrying passengers on the steam railways of the country is economic waste? In 1910 there were 873,000,000 passengers carried by railroads, a vast majority of which number, according to Mr. Talbert's logic, would have been better off if they had stayed at home.

Another illustration; cotton is just as warm as silk, and yet unmanufactured silk imported into this country in 1909 amounted to $79,000,000, which when manufactured into women's dresses and men's neckties, etc., must have had a selling value of at least twice what the annual sale of motor cars amounts to.

Many people say we are a great deal better off without coffee than we are with it, and yet we imported in 1909 $79,000,000 of coffee. The selling price to the consumer at from 25 cents a cup at the hotels where many of our economists live, down to 10 cents a pound, must have amounted to several times the yearly expenditure for motor cars. In fact, one can go on citing examples of Mr. Talbert's kind of economic waste to fill books, not alone a newspaper.

The gist of the matter is that when one founds his economics upon that which he sees only upon the surface, he is lucky if he is able to hold his ground anywhere this side of the fig leaf and the ox cart. Marble wainscoting, heavy bronze fixtures and railings, massive pillars, and high land valuations can be much more readily argued as evidence of economic waste than can those present-day resources which, being the product of advancing civilization, tend to save time and abridge distances.

The logic of the advancement in civilization bears always towards a greater efficiency and greater capacity for enjoyment. The only real economic waste which is part of the use of a motor car is the paint, varnish, and refinement in finish; in fact, anything not incidental to the real efficiency of the machine does not aid in the saving of time and the shortening of space.

The universal introduction of the car, which is bound to come, is but responsive to the demand for individual transportation—the same sphere that is occupied by the horse-drawn vehicle.

Comparisons of the car with the horse-drawn vehicle are, therefore, consistent. Statistics show that there are 21,000,000 horses and colts in the United States. There are about 900,000 horse-drawn vehicles sold annually. This is exclusive of farm and delivery wagons, of which there are, in addition, about 400,000 sold annually.

The daily average use of the horse-drawn vehicle can be safely estimated as an average of four miles per day. There are in daily use in the United States 7,000,000 horse-drawn vehicles. It costs to maintain these vehicles, figuring the horses' keep at $12.50 per month each, at present prices of grain and hay, and without depreciation, $150 per annum. Therefore, the 7,000,000 vehicles using 10,000,000 horses, cost to maintain $1,050,000,000 per annum.

The cost of labor to drive these 10,000,000 horses is not less than 3 cents per mile. It, therefore, will cost to drive these 7,000,000 vehicles, $840,000 per day, or $306,000,000 per year. Adding the cost of driving the vehicles to the cost of maintenance of the horses, we would have a total expenditure of over $1,356,000,000 per annum for the 28,000,000 vehicle miles.

Let us figure how we would come out by using cars for these 28,000,000 vehicle miles per day, using a runabout as an illustration, for the expensive touring car class of users is such a small part of what makes the car industry, and the money they spend is less

of an economic waste than if they did not spend it.

	Per mile	Per day
Cost of tires	1½c	$ 420,000
Cost of labor	1½c	420,000
Cost of gasoline	½c	140,000
Cost of oil	1-10c	28,000

A total operating expense of....$1,008,000 or $359,000,000 per annum against the cost of $1,356,000,000 if by horse, making an economic saving of $997,000,000 per annum in favor of the car.

The above figures are somewhat large and perhaps hard to grasp. Therefore, let us use as a comparison a one-horse buggy and a small motor runabout, say one retailing at $600.

If we figure that a horse and buggy average four miles a day, this means a yearly mileage of 1,460. A conservative estimate of the cost of this mileage would place it at not less than $150.

A small runabout, $600, can be operated for:

1½ cents a mile for tires,
5/10 cent a mile for gasoline,
1/10 cent a mile for oil.

Allowing 2/10 cent for other expenses, we get a total of 2 3/10 cents a mile. It will cost, therefore, to do with the runabout $33.58 what it costs $150 to do with the horse. Is this economic waste?

Now if Mr. Talbert can figure how any economic waste takes place by the use of the car rather than the horse-drawn vehicle, we would like to see how he does it.

We cannot see but that we are occupying a field of great economic usefulness in making and selling automobiles, and it hurts us to have Mr. Talbert, Mr. Hill and other eminent financiers and economists say that which sounds as though we were charges upon society.

ANOTHER JERSEY CONTEST

New York, June 7—With an entry list of forty cars, the reliability run of the New Jersey Automobile and Motor Club, which will be held Saturday, promises to be one of the most interesting events of New Jersey motordom for the year. The course as laid out will be 145.1 miles and the cars will go over it twice in a day.

Locomobile Winner at St. Louis

ST. LOUIS, MO., June 6—The St. Louis Automobile Club hardly could have selected a less favorable day for its third annual reliability run, held Saturday. The run began in a drenching rain and finished in mud, much of the way up to the hubs. As a result of the unfavorable weather only twenty cars started, and, due in the greater part to the almost impassable condition of the roads, only eleven finished. There had been thirty-nine entries.

F. H. Semple, driving a Locomobile, was declared the winner of the Hagerman cup, offered for the car making the most nearly perfect score in class A, touring cars. Samuel J. Pingree was awarded the class D prize, the Plant-Walsh cup. He drove a Chalmers car. Mr. Semple's score was 967, and Pingree's 997. Not a perfect score was made, but officials of the club declare the test one of the best ever made in this city, owing to the condition of the roads and the downpour of rain.

Most of the cars which made the start were hooded with tops and side curtains. In addition to the contestants there were the press car, a Marmon, driven by Herman Schnure; a Franklin, driven by W. E. Brearley, for officials, and a half-dozen other non-contesting cars.

The trip for several of the cars was marred by accidents. The most severe mishap was to the Marmon car driven by A. R. Byrd, Jr., which suffered a broken drivingshaft and had to abandon the run at Eureka. Wall's Stearns car caught fire twice en route and mud was used to extinguish the blaze in each instance. Miss Ada Britton, the only woman driver in the contest, dropped out at the first control because of motor trouble. She was driving a Pope-Toledo. Others ran out of oil, some were withdrawn because of motor troubles, until finally only eleven were left at the finish.

The run was over a circular route from St. Louis through St. Louis and Jefferson counties and return. The distance was 109.1 miles. Under ordinary circumstances the road for the greater part of the way would have been almost perfect. Early Saturday, however, rain began to fall in torrents, and continued until after noon. By that time the country roads had become softened, and it was a fight through mud, and, in many places overflow from swollen streams. Miss Britton's Pope-Toledo failed just after she had forded water up to the hubs of the car. The start was from in front of the club's headquarters in the Planters' hotel, and the finish at Kingshighway and Forest Park boulevard. The cars which started and the score were as follows:

CLASS A TOURING CARS.

Car No.	Car	Driver	Score
6	Locomobile	F. H. Semple	967
9	Matheson	R. L. Smith	964
28	Cadillac	John H. Flachmann	944
24	Cadillac	F. H. Pingree	938
21	Cadillac	A. A. Kelly	927
7	Marmon	W. A. Meletio	902
5	Mitchell	C. M. Barnard	872
35	Locomobile	C. H. Albers	869
22	Kisselkar	Dr. O. Tupshaw	862
3	Cadillac	J. L. Boland, Jr.	
18	Packard	Joseph Dickson, Jr.	
17	Marmon	A. R. Byrd, Jr.	
10	Stearns	C. W. Wall, Jr.	
29	Falcar	J. L. Adrien	
12	Pope-Toledo	Miss Ada Britton	
20	White	P. D. C. Ball	
38	Marmon	C. K. Huthsing	

CLASS B ROADSTERS.

25	Chalmers	Sam S. Pingree	997
19	Hudson	S. E. Wolff	715
23	Buick	W. H. Boehmer	

ST. LOUIS CLUB RELIABILITY RUN—CHAIRMAN PLANT'S CAR

ROAD WORK IN VIRGINIA

Richmond, Va., June 7—From various points throughout the old dominion come reports of new road construction. In Washington county the supervisors are planning to construct $200,000 worth of new roadway, beginning work this year, while adjoining Washington county, just over the Tennessee line, Sullivan county is spending $300,000 for this purpose. Greenville county, Va., will build 28 miles of good roads, the contract being let at $1,200 per mile. Spottsylvania county will have an even 25 miles under construction shortly at a cost of about $1,750 per mile. Much of the new roads will be of macadam and gravel. In Fairfax county, 6 miles of road will be put in first-class shape, and reports from many other points, show marked improvements in the roads in almost every county in the state during this year.

ORPHAN'S DAY AT BOSTON

Boston, Mass., June 8—Special telegram—The motor outing for young, blind, crippled and orphaned children scheduled for today started promptly on time. The day was warm and the youngsters enjoyed every moment of their spin over the roads in motor cars and their hours spent at Lake Massapoag. They reached the lake shortly after 10 and remained there until about 4 and the last of them were finally landed at their starting point about 6 as happy a bunch of youngsters as ever gathered together. In all 218 cars were used.

Robertson Stars in Yale's Climb

NEW HAVEN, CONN., June 7—Special telegram—With the weather conditions ideal, the fourth annual hill-climb of the Yale Automobile Club was held up Shingle Hill, West Haven, this afternoon while over 5,000 people thronged the banks of the course. There was not a single hitch in the program of nine events which was run off without an accident of any kind.

This year's climb up Shingle hill was without question the stellar event of its kind in New England. Hundreds of motorists flocked into New Haven during the day and for the first time in the history of the old college town street venders hawked climb flags and other motor novelties on the streets. There were nine events, three of which were for motor cycles. All classification was by price and none but stock cars and motor cycles were allowed to enter except in the free-for-all events in which there were no restrictions as to horsepower or stripping of cars. All events were under the A. A. A. ruling.

F. J. Wagner acted as starter with C. H. Gillette, president of the Hartford Automobile Club, as referee. All of the cars were gotten off in excellent style, without the slightest confusion. The climb started promptly on time at 2 p. m. with the motor cycle events, but the real excitement of the day was not furnished until class 1, the free-for-all event, the last on the program, was reached.

The big crowds went frantic when George Robertson, of Vanderbilt cup fame, shot over the steep and difficult course in a 90-horsepower Simplex in :51⅘, the fastest time of the day. The record for the course, however, is :51 flat, made by David Bruce-Brown, at last year's climb in a 120-horsepower Benz when the course was not in such fast shape as it was today. Caleb Bragg, fresh from the Dead Horse hill-climb at Worcester, Mass., came second to Robertson, going up the hill in his fiat in :52⅖. H. J. Belcher driving a Knox was third in 1:01⅘. Billy Knipper in a Chalmers was fourth in 1:01⅕. There was a field of fifteen contestants in this event. Summaries:

CARS COSTING UNDER $1,600

Car	Driver	Time
Correja	J. Taylor	1:13
Buick	E. C. Bull	1:18⅘

CARS $1,600 TO $2,000

Buick	E. C. Bull	1:14
Buick	A. McMullin, Jr.	1:15⅗

CARS $2,000 TO $3,000

Knox	H. J. Belcher	1:06
Chalmers	W. Knipper	1:10

CARS $3,001 TO $4,000

Amplex	T. Jones	1:00½
Palmer-Singer	Pollman	1:09⅗

CARS $4,000 AND OVER

Houpt-Rockwell	F. Ives	1:07½
Simplex	R. Stern	1:08¼

FREE-FOR-ALL

Simplex	G. Robertson	:51⅘
Flat	C. Bragg	:52⅖
Knox	H. J. Belcher	1:01⅕
Chalmers	W. Knipper	1:01⅘

Thousands of spectators lined the banks of the dangerous S turn, half way up the hill, while there were official parking spaces laid out all along the route. Patrolmen and police with white and red flags guarded the course and there were no accidents to mar the day's success.

OKLAHOMA TEST TO PARRY

Oklahoma City, Okla., June 6—With one perfect road score and none in the technical examination that followed the close of the run, the contest board in charge of the reliability run of the Oklahoma Automobile Association of 814 miles over the state last week, Sunday announced the official result, declaring the Parry, driven by L. M. Dull, to be winner of the trophy donated by the Daily Oklahoman. Only six of the twelve cars that started finished the trip, and three out of this six were disqualified for leaving the path and failing to return when notified. The other cars to finish without disqualification were the Velie and the Ford. The Velie suffered a loss of 200 points on a broken crankcase, while the Ford finished with a score of 938.

That the losers will not give up, was indicated Sunday after the posting of the bulletin. The Franklin which finished with a perfect road score will contest its disqualification on the grounds that Referee W. P. M. Stevens did not interpret the rules correctly. The Franklin was driven by C. S. Carris, of the Franklin factory, and Ray Colcord, a local dealer. It is reported that the Velie will protest on the ground that when the broken wristpin caused the crankcase mishap he was being placed under too severe a test as both throttle and spark were wide open and the engine was racing at top speed while the car was standing still. Following is the last bulletin posted by Referee Stevens:

Final road scores, June 4—Franklin, 1,000; Velie, 998; Velie, 994; Parry, 989; Oakland, 983; Ford, 962.

Final standing after technical examination—Parry, 976; Ford, 938; Velie No. 2, 783; Velie No. 1, disqualified for leaving path; Oakland, disqualified for leaving path; Franklin, disqualified for leaving path, also on advice of chairman of contest board as to riveting of nuts and lock washers on thumb screws of gas headlights.

This is the second endurance run held by the Oklahoma Automobile Association and the first under sanction of the A. A. A. The Oklahoma roads, while still in the natural state, were found to be in fine condition and a 20-mile schedule was maintained throughout the run. The last day's run was the most trying of the trip, the contestants driving from Ponca City to Oklahoma City, a distance of 104 miles without stop and maintaining a 20-mile pace. A Cadillac was pilot car, and the Pioneer, the only car manufactured in Oklahoma, carried the officials.

POST PROTEST AMICABLY SETTLED

Washington, D. C., June 4—At the conclusion of the touring test run of the Washington Post to Richmond and return a protest was filed against the Moline on the ground that the driver stalled his engine on the second day's run, the protestant being the Maxwell-Briscoe Washington Co. The Maxwell touring car and the Moline both received perfect scores in their class. It transpired that E. H. Wine, driver of the Moline, was coming down the mountain side when he suddenly ran upon a wagon. To save himself and the car he threw in the reverse and stalled the motor. Subsequently the protest was withdrawn.

NEW KIND OF A TEST

Boston, Mass., June 6—An E-M-F 30 started this morning on a test of durability which will continue indefinitely, according to Charles A. Malley and Burleigh N. Crockett, of the local E-M-F branch, who are in charge of it. The car was started on its trip by Governor Eben Draper from in front of the state house and Charles J. Glidden was the one who gave the crank a turn to set the motor going. Earl Hawkins was at the wheel. The plans of the run call for a compilation of the gasoline and oil figures, the tire wear, the stops and other things incidental to a long run. It is not a non-motor stop run, but the motor will be kept going as long as possible, the stopping of it not ending the test, however. It is the idea to get an idea of how reliable the car is in the ordinary every-day traffic.

ST. LOUIS CLUB RELIABILITY RUN—CROWD WATCHES START

MANY NEW YORK ORPHANS ARE MADE HAPPY

NEW YORK'S ORPHANS' DAY—CHILDREN TURNED LOOSE IN DREAMLAND

NEW YORK'S ORPHANS' DAY—CARS LINED UP FOR THE START

NEW YORK'S ORPHANS' DAY—BENZ TRUCK LOADED WITH CHILDREN

NEW YORK, June 4—Four miles of motor cars laden with 3,500 happy little children, inmates of twenty-two of New York's orphanages, made a trip to Coney Island Thursday. The children were the guests of the Orphans' Automobile Day Association of New York, and they had a royal time.

There were 400 cars in the procession and an effort was made to maintain 50-foot intervals during the run. Aside from the fact that the truck divisions contained thirty-two big machines, the feature of the parade this year was the presence of 120 taxicabs in line. There were more than 200 touring cars, most of them privately owned and donated for the occasion. Fifteen sight-seeing cars, each loaded with the most enthusiastic lot of passengers ever carried by it; three opera buses and several motor stages, completed the procession. Some of the youngsters were picked up as far away as Yonkers; thus the ride they had was nearly 75 miles long, but the average was in the neighborhood of 30 miles.

Taken to Dreamland

At 10 o'clock in the morning, under unpromising weather conditions, the head of the procession began to move amid the delighted shouts of the little ones. Every car was bedecked with flags announcing that its destination was Dreamland, and nearly every child had been furnished with a small American flag. When the cars straightened out over any stretch of street that was without curves, the line of motor vehicles had a gay appearance. Sections of the cars had been delegated to get the youngsters at the various institutions and the parade formed on the cross streets between Seventy-ninth and Seventy-second streets with the head of the column resting at Seventy-eighth street and Broadway.

The route followed was down Broadway to Forty-eighth, to Fifth avenue to Fifty-seventh, thence to Second avenue and across the Queensboro bridge and by a devious route through Brooklyn to the scene of the annual merry-making.

Six Bands in Line

There were six bands in the procession and after the cars had reached their destination, the musicians furnished a variety of tunefulness for the benefit of the big crowd. Every show in Dreamland was open to the kids and they shot the chutes and did various other things until they were tired. But first of all, immediately after reaching Coney, the little ones were filled up to the last notch with a tasty dinner provided by Hugh Chalmers and served in one of the immense dining-rooms of the resort. Three times the great hall was filled with the clamoring children who with appetites sharpened by the long ride in the snappy air ,were ready to do justice to a far less toothsome spread. The

MOTORISTS REMEMBER THE POOR CHILDREN

affair was a notable success in every possible view and was satisfying.

Colonel K. C. Pardee, president of the Orphans' Day Association, presided. Colonel Pardee was decorated with a sample of all the badges used in the parade and presented a smiling face to the little ones from above the riot of color lent by the bright-colored badges. Alex Schwalbach, secretary of the association, was in direct charge of the details of the affair. It is estimated that the cars in line represented a total valuation of over $2,000,000.

Orphans' Day at Louisville

Louisville, Ky., June 5—More than 1,000 little orphans were made glad and given the time of their lives yesterday by the Louisville Automobile Club, which gave the little tots a free ride and a trip to Riverview park. There was some disappointment on the part of Ben Watts and his committee in charge of arrangements, because of a heavy rain, but this did not dampen the spirits of the children. Following a long trip through the principal streets, the youngsters were taken to the park, which was turned over to them. After the children had enjoyed the show at the vaudeville theater, they were treated to all of the cake, ice cream, candy and peanuts they could eat. Again the cars were filled with the club's little guests and once more the long procession was formed for the homeward trip.

Pittsburg Does Not Forget

Pittsburg, Pa., June 3—The sixth annual orphans' day was observed in Pittsburg Wednesday, June 1, under the management of the Automobile Club of Pittsburg. Although the weather was very unfavorable, 135 cars were in line, and over 800 children enjoyed the outing, twelve different institutions taking part. The usual ride of about 25 miles around the parks and boulevards was broken by a stop at the zoo. The afternoon was spent in Schenley park, where luncheon was served.

Bisons Make Their Plans

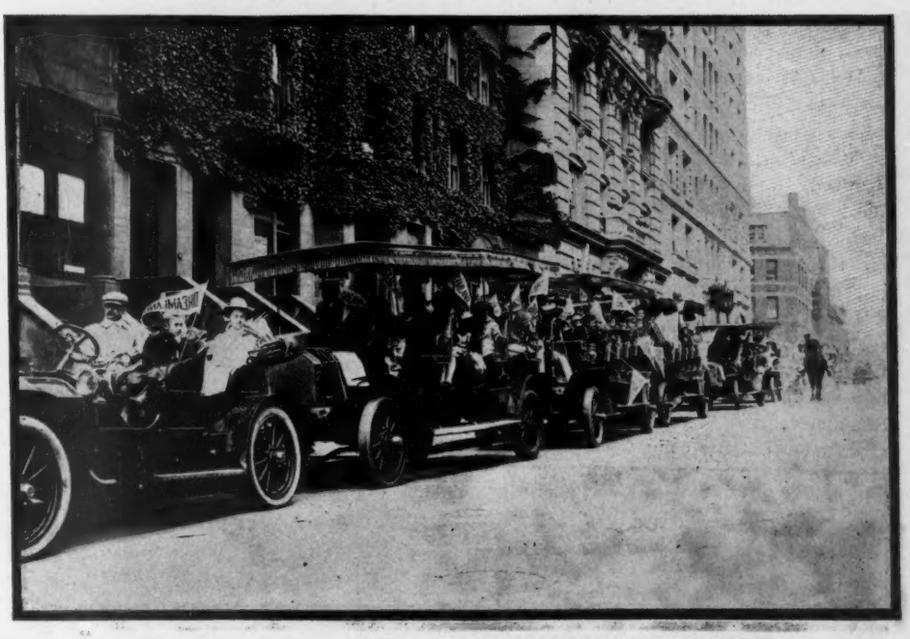
Buffalo, N. Y., June 6—Many orphans will be guests of the Automobile Club of Buffalo on a motor car ride on Thursday of this week. After a parade through the downtown streets and parks the youngsters will visit Carnival Court, a local amusement resort. Members of the club have received postal cards requesting them to loan their cars for the parade, and a generous response will be the result.

Columbus in Line

Columbus, O., June 6—Arrangements for orphans' day, which will be held the latter part of June, under the auspices of the Columbus Automobile Club, are going on rapidly. It is proposed to give at least 2,000 children a picnic at the grounds of the country club.

NEW YORK'S ORPHANS' DAY—CARS PARKED OUTSIDE OF DREAMLAND

NEW YORK'S ORPHANS' DAY—ATLANTIC WHITE LEAD CO.'S TRUCKS



NEW YORK'S ORPHANS' DAY—ALL KINDS OF CONVEYANCES ARE USED

Abbott Files Answer to Columbia

DETROIT, MICH., June 6—In the answer filed in the suit of the Columbia Motor Car Co., acting for the A. L. A. M. against the Abbott Motor Co., of this city, the latter concern acting through its attorneys claims conspiracy to stifle competition, limit manufacture and sale of motor cars and enhance profits of manufacturers operating under the Selden patent. This answer was filed Thursday in the United States circuit court here by the Abbott company's attorneys.

More than this, the Abbott company claims that its own agents have been interfered with, and greatly hampered in making sales. The company asserts that the Selden patent has less than 2½ years to run and alleges: "that manifestly it is the intention and policy of the Columbia Motor Car Co. and the Association of Licensed Automobile Manufacturers, which owns and controls its product, to bring suit under the patent and harass competitive manufacturers, compelling them to expend large sums of money in the courts."

Further, the company alleges that it is not the purpose of the complainant to bring these cases to trial, and petitions the court that the case be ordered to an immediate issue; also, that the complainant and the A. L. A. M. be restrained from threatening the Abbott company or its customers with further suits under the Selden patent, from in any manner hereafter interfering with agents or employes of the Abbott company, and from interfering with the credit of the Abbott company by letters, threats, etc.

A new point is made when the Abbott company asserts that the principal features of the Selden patent were disclosed in printed publications in this and foreign countries 2 years previous to the date of application for the Selden patent, and that the essential points thus became publicly known and were publicly used 2 years before the patent was asked for.

It denies the right of the company to bring suit against the Abbott company, charges Selden with postponing the issue of his patent for the "fraudulent purpose of extending the life of the letters when granted," and charges that he copied the ideas of other inventors. Further, it is claimed that the complainant company has no right to determine who shall have licenses under the patent, and charges that a large part of the fees received from such licensees are retained and used for the purpose of maintaining various committees known as price committee, trades committee, agency control committee and association patents committee. The duties of these committees, the Abbott company claims, "consist solely in making arrangements and undertakings whereby commerce between the various states and territories and foreign nations in said motor industry is sought to be controlled."

Attorney Abbott, when interviewed by a Motor Age representative, stated that new evidence in the shape of English patents has been unearthed, these being of a basic character, and antedating all patents of which mention has previously been made in the Selden-Ford case. He expects on the basis of this very strong evidence to prove his contention that the patent is invalid and void.

Although Mr. Abbott and the Abbott Motor Car Co. are working alone in this matter, it just happened that at the same time with the filing of this answer, an appearance was entered by the other motor car companies in this city, which also have been made defendants in similar suits. In the instance of the Warren Motor Car Co., the Flint Wagon Works, and the Carhartt Automobile Corporation, the attorneys are Henry C. Walters, of this city, who also is attorney for the new Association of Motor Car Manufacturers, now forming, and Livingston Gifford, of New York city. Mr. Gifford also is associated with Thomas E. Barkworth, who entered the appearance for the Imperial Automobile Co., Jackson, Mich., and Lodge & Brown, representing the Demotcar Co.

Aside from entering their appearance in the United States court, these companies have 30 days in which to file their answers, dating from June 6. It is said that the answer in these cases will be entirely different from that of the Abbott company, which raised the points of patent invalidity and conspiracy to increase trade and profits. It is said a number of new and different points will be raised, these attorneys taking an entirely different tack.

Still Talking Merger

The talk of a merger of the smaller companies still persists, although now it is assuming more definite form, and it can be stated as a fact that two different groups of manufacturers are working to effect two different combinations. Within a week or so, a statement, giving the name of the companies in the deal, is expected. One of the mergers is said to include some six small motor car companies in Detroit and nearby towns, a tire company, a machine shop doing jobbing work only, and a body plant. With a combination such as this would make, it is figured that some progress may be made in the way of small internal economies, better buying prices, and superior selling organization, to say nothing of the prime idea of making a concern large enough to stand off competition of any kind whatsoever, whether fair or otherwise. Whether the one figured in this combination or not, it is a fact that one of the local banking houses has a body plant for sale, at what is said to be a low figure.

During the week the Michigan Magneto Co. was incorporated at Lansing, with a capital of $25,000, to make and sell motor car and other ignition apparatus, the place of business being given as Detroit. The Vulcan Gear Works, of Detroit, also increased its capitalization from $5,000 to $100,000.

Flint's Assessed Valuation

According to the completed rolls of the board of assessors, the assessed valuation of the town of Flint has jumped more than $6,000,000 since last year, this being due entirely to the motor car factories there. The first ward, in which the Buick, Weston-Mott and General Motors plants are located now has a valuation of $6,500,000, which is the equal of the total assessed valuation of the whole city 10 years ago.

The new machine and paint shops of the Owen Motor Car Co. have been completed, and the machinery and fittings are now being installed. The bad weather has delayed the work on these buildings very much, so that it is now some weeks behind the contract. The new addition joins the main buildings to the rear, and is 50 by 300 feet in size and two stories high.

Across the river, at Windsor, the Regal Motor Co. has commenced the erection of a two-story factory, 60 by 400 feet in size, and housing 160 men. This factory will have unusual shipping facilities, the immediate vicinity being tapped by the Grand Trunk, Wabash, Michigan Central, Canadian Pacific and Pere Marquette railroads. On any or all of these railroads there will be no switching charges. The railroads are co-operating nicely with the town of Windsor in its efforts to attract manufacturers with good results.

One of the biggest news items of the week includes the details of three new factories, one of them a mammoth steel plant, which would be of vast assistance to the industry as a whole. This last was somewhat in the nature of a rumor, although well-known Chicago capitalists and steel men visited the city, inspected sites, and saw many local capitalists and business men. The men were A. W. Thomson and J. W. Alvord, both directors of the Inland Steel Co. While here they were entertained by Thomas H. Simpson, of the Michigan Malleable Iron Co., and George

Gossip of The Trade in Detroit

H. Barbour, of the Michigan Stove Works. Following closely upon their visit and the attending rumors, the common council took action with regard to the vacation of certain streets between Jefferson avenue west and the river, which makes it possible to have a clear tract of land there of between 14 and 18 acres, which can be increased to 20 acres by filling in to the river bank. The steel plant as projected was connected up to this city section.

The location is an ideal one, near to the Detroit Iron and Steel Co.'s plant, while the Detroit Furnace Co. is said to be seeking land in the vicinity. The Morgan & Wright factory is close by. Later, this rumor was denied, it being reported that the land in question was under option to Rogers, Brown & Co., who would erect an iron furnace. Either way, Detroit and the motor industry will be gainers.

The newly organized Grant & Wood Mfg. Co., of Detroit and Chelsea, in which A. O. Smith, of the A. O. Smith Co., of Milwaukee, Dr. J. B. Book, formerly of the E-M-F Co., Walter E. Flanders, president of the E-M-F Co., and others are interested, announced the past week that they would embark in the manufacture of steel balls, in addition to the line of machine tools previously announced. This leads the company directly into the ball bearing business. With the strong E-M-F interests in the company, this move is taken to mean that the E-M-F cars for next year will be outfitted with the new ball bearings.

For Port Huron and Alpena

The two plants to be announced will not be located in Detroit proper, one being for Port Huron and the other for Alpena. The latter city has accepted the proposition of C. H. Nunnelly and H. V. Grosbeck, of Mount Clemens, and will furnish $20,000 in stock, a site, and a cash bonus of $50,000, while the promoters are to furnish $30,000. The car which will be built is to have a four-cylinder engine rated at 35 horsepower, runabout and similar bodies of three or four-passenger capacity, and sell at a medium price.

Out at Port Huron the selected location of the Cass motor truck factory was announced. It is to be upon Lapeer avenue, and work has been started upon it. The company expects to give employment to 600 men at the start. The following directors have been selected for the company: John O. Turnbull, George Epstean, Frank B. Nichol, and A. N. Spater, of Detroit; H. G. Barnum, Philip Higer, and F. J. Haynes, of Port Huron.

Saginaw will be the scene of the next big operation of the General Motors Co., which has just announced that the sum of $800,000 will be spent upon the Jackson-Church-Wilcox plant there, where all General Motors steering gears are now being built. Some wonderment has been expressed at the action of Russell C. Durant, son of W. C. Durant, head of the General Motors Co., formerly Pacific coast representative of the Anhut Motor Co., in suing that company for $5,000. This action was taken directly after a visit to his father at Flint. Young Durant claims that the $5,000 represents deposits on cars which were not delivered to him, and money spent in advertising. Being under age, Durant had to bring suit through a friend.

During the week the Detroit-Dearborn Motor Car Co. filed notice with the secretary of state of an increase in its capitalization from $100,000 to $250,000.

To Increase United Motors Stock

A stockholders' meeting for June 15, in Jersey City, N. J., has been called by the United States Motor Co., to consider the advisability of increasing the capital stock from $8,000,000 common and preferred to $15,000,000 of each, making a total of $30,000,000. The common stock will be placed on a 6 per cent basis July 1. As the fifth member of the executive committee of the Detroit division of the United States Motor Co., John A. Boyle, general manager of the Briscoe Mfg. Co., has been selected. He has been connected with the Briscoe company since its formation, being one of Detroit's old hardware men. The other members of the executive committee are: Frank Briscoe, chairman; O. J. Mulford, vice-chairman; E. J. Corbett and Morris Grabowsky. E. E. Martin is secretary for the committee.

The nearness of the state fair, and the amount of publicity being given to it in the way of advertising that the first showing of the 1911 models of motor cars will be made there has done much toward booming the coming industrial exposition, to be held here June 20 to July 6, in which the car manufacturers and dealers have promised to participate. The latter are vitally interested, for the great influx of out-of-town visitors, particularly from the smaller towns, where agencies are not maintained, at this very seasonable time of the year, is expected to result in much business. The lighting plans for the exposition have been approved and the work is going on apace. It is intended to make this one of the big features of the show.

Oppose Boulevard Garages

Owners of property along the boulevard, Detroit's finest thoroughfare, have combined and formed an association, the object of which is to fight the further encroachment of garages, factories, or unsightly driveways, which would make the drive as a whole less beautiful. The name of the association is the Boulevard Improvement Association, and it already has scored a signal victory in having the common council refuse permission for the building of several driveways, asked for by the Ford Motor Co., which is building an immense garage and salesroom on one of the prominent boulevard corners. In this connection, it is said that the Packard company is soon to follow in Ford's footsteps, the purchase of a large corner by Henry B. Joy being said to have this significance.

Among those to join the colony across the river in a bid for Canadian business is the McCord Mfg. Co., which has just begun manufacturing operations in the new branch at Walkerville. A force of sixty men started work.

WILLYS SUITS DISMISSED

Indianapolis, Ind., June 6—A formal order dismissing the suits for an accounting and receiver brought in the county and federal courts here against the American Motor Car Sales Co. and John N. Willys, its president, has been entered on the motion of the plaintiffs, Thomas P. C. Forbes, Jr., of New York city, and Henry F. Campbell, of this city, stockholders in the sales company. Mr. Willys has taken over the interests of the stockholders and now has control of the sales company and of the Willys-Overland Co., of Toledo, O. A reorganization is to take place at once under the name of the Willys-Overland Co., with an authorized capitalization of $2,000,000, taking in the sales company, the Willys-Overland Co. and the Overland Automobile Co., of this city. It is planned to issue $800,000 worth of stock to the Overland company.

In the settlement of the litigation Mr. Willys gave the stockholders $1,000,000 for their interests, paying $150,000 in cash and giving notes for the balance, due in 36 months and secured by $1,015,000 worth of stock in the Willys-Overland Co., deposited with a local trust company.

Forbes, Campbell, and the latter's father, E. B. Campbell, owned about half of the stock in the sales company and also were interested in the Willys-Overland Co., which was organized from profits of the sales company. Mr. Willys says there were no grounds for the sensational charges of mismanagement named in the suits, and that he is satisfied with the results, in view of the fact that he has gained control of the properties.

Coffin Discusses Stock Car Rule

DETROIT, MICH., June 4—Stories published in local papers relative to the stock car decision of Referee Pardington at Indianapolis have brought forth an answer from Howard E. Coffin, chairman of the general rules committee of the Manufacturers' Contest Association, who says:

"As chairman of the general rules committee of the Manufacturers' Contest Association, I feel that certain explanations are due relative to the enforcement of the stock car rule by Referee A. R. Pardington at the recent Indianapolis speedway meet, where several makes were barred from stock car events. A stock car race naturally is one presumedly in which are to be entered cars identical in all essential details of materials and mechanical construction to those cars which stand upon the showroom floor of the manufacturer's representative and which are delivered to the purchaser.

Rules Poor Last Year

"During the past seasons the records of the technical committees have shown many evasions of the stock car rule. Many of these evasions could not be prevented, owing to the laxity of the existing contest rules of the American Automobile Association governing motor car events. Moreover, contest affairs were in a chaotic condition, owing to an attempted control of national affairs by at least two other bodies. These unsatisfactory conditions led to the formation about a year and a half ago of the Manufacturers' Contest Association, embracing within its membership nearly all the leading motor car makers. The objects of this organization, quoting from article 2 of the constitution, are: 'The advancing of healthy, sportsmanlike and uniform conditions in motor car contests of every nature and causing such contests to be held under the auspices of an active organization, supported and governed by representative interests in motoring affairs.'

"The membership of the Manufacturers' Contest Association—again quoting from the constitution, article 3, section 1—'shall be composed of actively engaged American manufacturers in good standing who have built at least fifty or more, or are actively engaged importers in good standing who have imported fifty or more cars of the same make and which they represent at the time of application for membership,' etc. Section 6 of the by-laws reads partially as follows: 'General Rules Committee—There shall be a committee known as the general rules committee, consisting of a chairman, who shall be elected in the manner of electing officers hereinbefore prescribed, and twenty-four associate members of such committee.' Section 8 of the by-laws is quoted herewith in its entirety: 'The special rules and classification committee shall prepare classifications and formulæ applying to all contests. It shall submit on or before September 1 of each year to the contest board of the American Automobile Association or its successor, or a similar board, recommendations as a basis for creating general contest rules to govern for the succeeding year. It shall also transmit to the Automobile Club of America, or the corresponding body then representing foreign motoring interests in this country, at least 2 months in advance of the meeting of the Association of Recognized Automobile Clubs or corresponding body, its recommendations and suggestions on behalf of the M. C. A. Such classification and formulæ compiled by the special rules and classification committee shall be submitted by mail or otherwise to the members of the general rules committee for comment and revision, and their subsequent disposal by the special rules and classification committee shall be final and binding.'

All Makers Are Equal

"Thus it will be seen that the rules and conditions governing motor car contests have been evolved by a coöperative action upon the part of the representative motor car manufacturers of America. The general rules committee is composed of representatives of the following concerns: Chalmers, Apperson, Buick, Hudson, Stoddard-Dayton, E-M-F, Fiat, Marmon, Franklin, Jackson, Knox, Locomobile, Lozier, Maxwell, Mitchell, National, Pierce-Arrow, Renault, Stearns, Thomas and the White. Among the membership of the Manufacturers' Contest Association are the names of the following well-known makers: Apperson, Alco, American, Buick, Brush, Benz, Chalmers, Columbia, Stoddard, E-M-F, Fiat, Franklin, Hol-Tan, Hudson, Hupmobile, Jackson, Knox, Locomobile, Lozier, Maxwell, Mora, Marquette, Mitchell, Matheson, Moline, Metzger, National, Marmon, Olds, Oakland, Peerless, Premier, Pierce-Arrow, Palmer & Singer, Renault, Reo, Selden, Stearns, Thomas, White, the Willys-Overland.

"The interests of the individual maker are, as they are in any other organized business activity, made secondary to the average interest of the organization as a whole, but each individual concern is put upon an equal footing in that its cars are forced to compete in stock car events under the same impartially drawn and impartially administered stock car requirements.

"So flagrant did the abuse of the spirit of the stock car rule become in the contests of 1909 that the public naturally began to be extremely skeptical upon all matters touching stock cars and stock car competitions. That this feeling upon the part of the public—the owners and prospective owners of thousands of motor cars—did and does exist, has been clearly proven by the many inquiries upon such matters which have been registered with the several technical motor car papers of the country by the readers of these publications.

"To inject into the motor car contest and its control those same principles of business honesty which are held to be indispensible in other lines of business activity and to impress upon the minds of the buying public a feeling of confidence in the stock car claims of the American manufacturers, have been the chief efforts of the general rules committee of the Manufacturers' Contest Association and of the contest board of the American Automobile Association. Upon the contest board of the A. A. A. falls the administration of these rules, which have been accepted by the manufacturers as for the best interests of the motor car industry as a whole.

Racing Business Proposition

"Motor car racing, if followed consistently by the manufacturer, is entirely too expensive to make it a matter of sport. If it is to be a matter of business, a source of publicity and a means of demonstrating to the buying public those qualities of motor car construction and

CARLILATO IN FRANCO, WINNER OF 1910 TARGA FLORIO

endurance which must recommend his product for the everyday use of the purchaser, then certainly there can be no objection to the introduction into motor car contest affairs those same principles of honest business administration which the manufacturer and the public would expect to maintain in any other line involving the expenditure of a similar or equal amount of money and effort. Moreover, the maker who elects to obtain through stock car racing and contest work those important advantages in an engineering, publicity and selling way, and who goes at it honestly, making entry of his bona fide stock product, can not be blamed for insisting upon an impartial administration of those rules which he has himself observed and which, having been adopted by the two great organizations representing respectively the manufacturer and the motor car user—the Manufacturers' Contest Association and the American Automobile Association—must necessarily govern in motor car racing until revoked or revised by these same governing organizations.

Insuring Real Stock Cars

"Under the 1910 rules the definition of a stock car is based upon a sliding scale calling for a percentage of the total output of the manufacturer before any model may be termed a stock model. In stock chassis racing it is recognized that certain changes in equipment and arrangement of parts must be permitted for considerations of the safety both of the car occupants and of the spectators. These options permitted do not, however, embrace any changes either in material or important constructions.

"The motor car manufacturer who wins by methods of unfairness not in accordance with the rules a stock car event is guilty of an offense against those who compete with him—an offense of a seriousness certainly represented by the thousands of dollars spent by his competitors in an effort to win honestly that which he has obtained by unfair means. In any other commercial activity such methods would be made immediate grounds for legal action for the recovery of damages. If a manufacturer spends thousands of dollars in the purchase of publicity and other advantages, of which he finds himself fraudulently deprived, should he not have the same protection and legal redress whether this money be spent by him in the purchase of advertising space in a magazine or in a publicity campaign upon the road and track?

"It has not been the intent in the draft of the 1910 rules to work a hardship upon any concern or concerns by debarment from participation in speed and endurance contests. There has, however, been a great effort put forward to insure honesty of declaration and entry of cars into those classes for which their specifications permit them to qualify."

Poor Track Competition at 'Frisco

SAN FRANCISCO, CAL., June 2—The good roads motor meet and aviation contest held at Tanforan park on Sunday and Monday afternoons, May 29 and 30, was a failure financially. The meeting was held under the auspices of the San Francisco Motor Club, but the contest committee failed in its efforts to secure any fast cars among the entries, and as a result the attendance was slim. There were but four cars entered, the Buick, Ford, Knox and Autocar. Most of the honors went to the Buick, which defeated the Ford, Knox and Autocar in four different events, but which in turn suffered defeat by the Ford and the Autocar. Frank Murray piloted the Buick to victory in three 5-mile races against the Knox and in the 5-mile handicap defeated the Autocar which was given 25 seconds handicap. The Ford trailed the Buicks, winning in the 5-mile event, covering the distance in 4 minutes 37 seconds. In the 10-mile handicap, in which the Ford was given 1 minute handicap, the Buick failed to catch the little car, although it covered 1 mile of the course in :58.

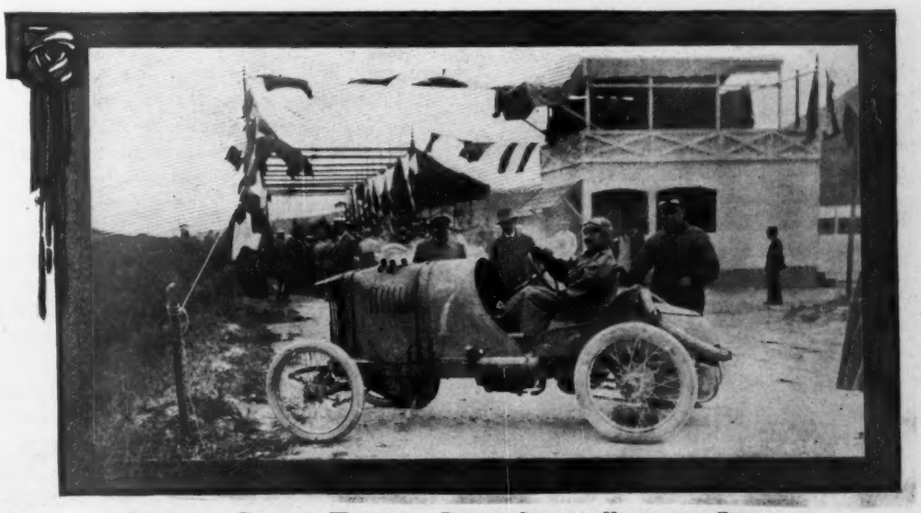
SECRET-TIME WINNERS

Syracuse, N. Y., June 6—Announcement is made of the list of winners in the secret time contest which was part of the recent central New York relay club run, eleven of these prizes being given. The secret time for each lap of the run was set and sealed and placed in the custody of Mayor Schoeneck, of Syracuse, previous to the start. This list was read last Thursday, and showed the winners were as follows: Syracuse to Auburn, H. S. H. Wilson, Thomas; Auburn to Cortland, L. W. Quick, Buick; Cortland to Ithaca, I. S. Stillson, Stevens-Duryea; Ithaca to Watkins, Daniel Rothschild, Winton; Watkins to Elmira, George Messer, Franklin; Elmira to Owego, Theodore Friendly, Selden; Owego to Binghamton, Harry L. Conde, Brush; Binghamton to Oneonta, E. R. Caldwell, Pullman; Oneonta to Five-Mile Point, L. P. Butts, Elmore; Utica to Oneida, H. S. H. Wilson, Thomas; Oneida to Syracuse, T. F. Willis, Oakland. The drivers ran remarkably close to this secret time schedule, Stillson and Messer each coming within 1 minute of blind bogey, while Wilson won two of the prizes.

DETAILS OF MUNSEY TOUR

Washington, D. C., June 4—The second annual reliability contest promoted by the Munsey newspapers will be known as the Munsey historic tour, as it will cover a section of the country rich in historic and scenic interest. The contest will be double in character, with two groups of entries, one devoted to manufacturers and agents of cars, and the other to private owners. The former entries will be received under grade 2 of the 1910 reliability contest rules of the A. A. A., while the private owners will participate under the rules of grade 4. The contest will start at Philadelphia on August 15 and end in Washington, D. C., 2 weeks later. The approximate route to be followed is Philadelphia to Morristown, N. J., West Point, Lenox, Mass., New London, Boston, Portsmouth, N. H., Portland, Me., Plattsburg, Saratoga, Harrisburg, Gettysburg, Frederick, Baltimore, Washington. The approximate distance is 1,600 to 1,700 miles, and the estimated running time is from 11 to 12 days. The entry fee will be $25.

The work of blazing the route for this tour will begin on June 15, when a competent staff of men will leave for Philadelphia and map out the route to be followed by the contestants. As the Glidden tour covers western territory this year, it is expected the Munsey historic tour will fill the void caused by the running of the older event in the west. The first entry in the tour was made by the Premier Motor Mfg. Co., which nominated a six-cylinder Premier with Ray McNamara as driver of the big car.



BOILLOT IN PEUGEOT, WINNER OF RECENT SICILIAN VOITURETTE RACE

SPECIMENS OF ROADS ENCOUNTERED IN KANSAS BY REGAL PLUGGER IN THE SWING AROUND THE CIRCLE TOUR

Motor Conditions in Southwest

OKLAHOMA CITY, Okla., May 30—From the deck of the Regal Plugger through Kansas and Oklahoma the observer notes motoring conditions in the alfalfa country as follows:

Wanted—Motor car salesmen for the great southwest, men who can go into the fields; men who can talk crops intelligently; men who can follow the farmer on the mower, cutting his fourth successive crop of alfalfa for the season;—these are the men who can sell motor cars in vast quantities in this great southwestern empire, for his customer, the farmer, is too busy harvesting that which nature gives with such a bounteous hand, to come to town just now. There's the wherewithal to purchase a motor car growing in ten times 10,000 fields in Kansas and Oklahoma today, and alongside those fields extend ten times 10,000 miles of beautiful natural highways inviting the invigorating spin across miles of level country.

Wichita, with a population of 60,000, boasts of 50 miles of paved streets and 40 more in process of construction. Wichita, with nine garages and a hustling motor club, claims nearly 1,000 registered cars within its borders. Wichita has a traffic squad, and it needs it, for all day long a continuous stream of cars rolls up and down Douglas street, the main thoroughfare, and in showing puts to blush many an eastern city of four times its size.

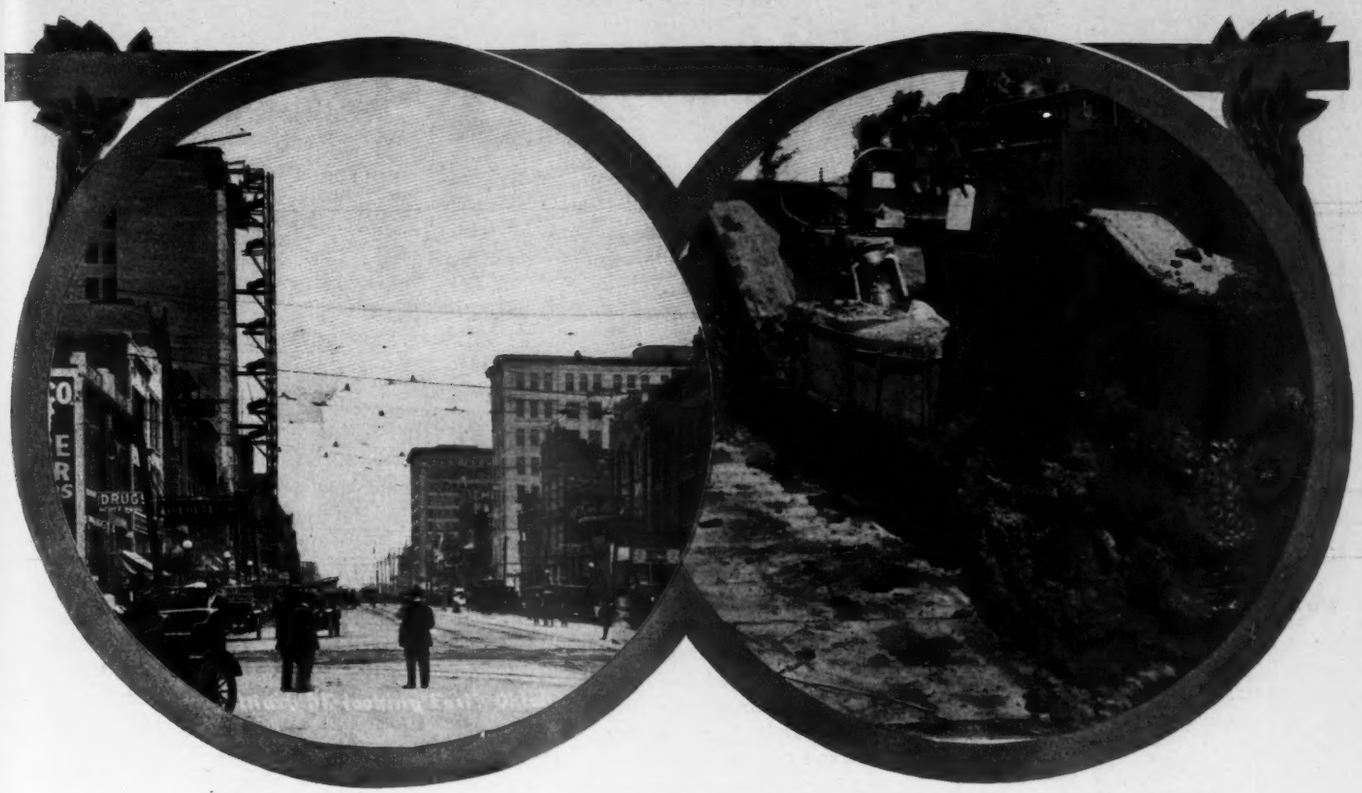
So far as one may observe, every known make of car in America is represented here and they are sold, too,—one look at the streets tells that. We must not assume, however, that these cars all belong to city owners; far from it. A study of the drivers as they pass shows that a large proportion are from the surrounding country. Straw hats and overalls are strongly in evidence and a peek into the tonneaux of the cars often discloses parts of farm machinery, supplies and groceries.

Approach these owners and you will find that they have run in 10, 20 and perhaps 40 miles or more and will be back on the farm in an hour or so, and there you have the secret of the great future for cars in this southwest country—the roads. The country, as level practically as a floor, stretches away for 1,000 miles and is one huge checkerboard of roads, laid off at mile square intervals. The gumbo soil is a natural road surface, packing smooth and hard, but under long-continued rains is converted into an impossible quagmire of tenacious glue which effectually puts a stop to travel. No attempt has been made in a general way so far as may be observed, to assist nature in maintaining these highways. This lack of action on the part of the state and county officials is now at an end, as car owners have brought the necessary pressure to bear, and intelligent action has already put the construction gangs in the field.

Ever since our departure from Kansas City we have been following the route of the Glidden tour southward, and as we leave Wichita for the run to Oklahoma City, 218 miles distant, we follow it again out across the Arkansas river and set sail for Enid, Okla., which is 112 miles distant. The road, sun-baked after an unusual rainfall, is hard as nails, and badly pitted, so that our observation of the surrounding country is somewhat disturbed by excessive vibration. Occasional mudholes in dips in the road give us a lively battle with almost bottomless gumbo. Occasional stops in the little towns disclose a local garage, and a surprising number of cars; in fact, Enid with a population of 12,000 supports four fine garages, and over 400 cars are owned in and about the town. The streets are all newly asphalted, and the population is a unit in agreeing that motor cars are alone responsible for such conditions.

There are no unusual road conditions to be met in fair weather between Wichita and Oklahoma City. The road, owing to the mile-square intersections, is most difficult to follow and near the Kansas-Oklahoma line at the crossing of the Cimarron river, is broken and somewhat sandy. Oklahoma roads are a decided improvement over the Kansas brand, inasmuch as the gumbo roughness disappears as the soft red clay of the south appears.

We light our lamps at Enid and bear away for Kingfisher to the southeast with the intention of making a double century for the day and are soon treated to a celestial display of great beauty. Away



OKLAHOMA CITY, A METROPOLIS OF THE SOUTHWEST, AND SAMPLE OF GUMBO MUD IN SOUTHERN KANSAS

As Noted by the Regal Pluggers

over in the east, just under the edge of the world, a genuine Oklahoma electrical storm is in progress; while in the western sky dashing among a million brilliant twinkling stars, the great comet follows its path toward the horizon and finally sinks from sight, the searchlight gleam of its silvery tail lingering in the heavens for a while.

As we progress further into Oklahoma, we encounter more evidences of road improvement in the shape of steam tractors, ditching machines, rollers, etc., and miles of road recently worked over which will, no doubt, be in splendid condition for the Glidden tourists, but which present fearful going and the loss of hours of time to the Plugger.

Already the people of the smaller towns are talking of the tour and great interest in it, and in motor cars in general is evinced. Owing to the miles of roads under improvement, our progress is so impeded that midnight finds us at Kingfisher, 50 miles out of Oklahoma City, and we decided to call it a day's journey, as all are thoroughly tired from the continued thumping of the last 50 miles over the badly-torn-up roads.

Facing an invigorating breeze and under a cloudless sky we are away the next morning at 8 o'clock and plug along through a rolling country of green farms to the never-ending whirr of the mowers busy in the fields to right and left cutting alfalfa. The country becomes more rolling, genuine hills appear, and finally topping a long rise we sight the metropolis of Oklahoma, and ½ hour later roll down her broad, well-paved streets to our hotel, escorted by the usual bunch of motorists who have come out to welcome us.

The "Booster Town," as Oklahoma City is called, is rightly named, and indeed it is a wonder; with beautiful, broad, well-paved streets, magnificent buildings, and an air of tremendous hustle are everywhere. The first impression one has on entering the city is "What has become of the horse?" Motor cars! Why they fairly line the streets!

Every car under the sun is represented and the parade seems never-ending. Oklahoma City has a population of 70,000 and over 1,000 cars are owned therein. The city is just 21 years old, a mere baby, and yet no city in the country of five times its size can surpass it for the quality and quantity of its beautiful business buildings and magnificent residences.

There are a dozen fine garages, each complete in every detail, and for fear of contradiction, the writer refrains from stating the number of cars sold every day in the year by the dealers in this city. He saw the crowds in the different salesrooms; listened to the talk; saw the new cars being turned up for delivery; and came away impressed with the firm conviction that Oklahoma City has no comparison as a motor car market—and why not! Wichita and Oklahoma City, the logical centers of two immensely fertile gardens, each of 100,000 square miles, each with a thousand perfect natural roads leading to its doors, and stretching away to countless prosperous houses,—who wouldn't have a car in such a country, when nature makes the roads and supplies the money, and 10,000 farmers are just waiting today for that salesman to come along with their car.

CANADIAN GLIDDEN PROPOSED

Winnipeg, June 5—J. H. Haslam has announced his intention of donating a trophy valued at $1,000 for an annual motoring contest open to all owners of cars in Canada, the contest to be run during the first 10 days in October of each year. The first contest will be run under rules similar to those of the American Automobile Association. Mr. Haslam hopes that his trophy will be as eagerly sought for by owners in Canada as is the Glidden trophy in the United States. The first contest is to be from Winnipeg to Calgary and return, by a route to be decided by the committee. It is understood that a movement is on foot to offer other trophies for roadsters and other cars competing in different classes, as is done in other competitions. The Haslam trophy is offered for touring cars, and all arrangements will be left in the hands of the clubs of Manitoba, Saskatchewan and Alberta, the route must be through the three provinces.

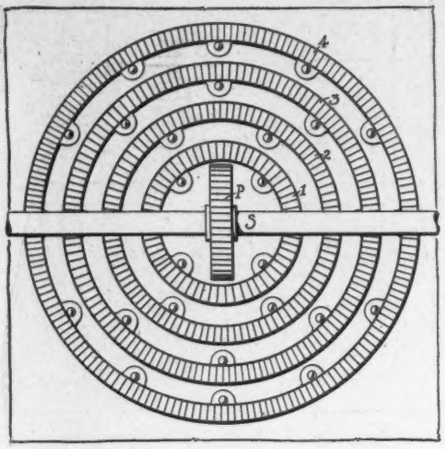


FIG. 1—LANE'S GEARSET SUGGESTION

HAS A NEW TRANSMISSION

WEST LIBERTY, IA.—Editor Motor Age—I note in current patents of Motor Age a short description of a transmission patented by Frank Moore. I am sending herewith a rough sketch of a transmission on which I have been working for some time; this is similar to Mr. Moore's, but I think it more serviceable and less expensive to repair. I have not patented it from the fact that it costs more than I can afford, then, if I did I would not have the funds to put it on the market, but I am sure that in the hands of a good mechanic and properly installed it would make a fine transmission. In case of breakage or wear, which is bound to be excessive, one would not be compelled to buy a complete disk, but could install the disk which had the broken teeth or worn parts. It will be noted from the illustration that each gear is bolted on to the disk proper, and in this way each one could be easily replaced. These gear wheels can be case-hardened and will wear much longer than tool steel. This gear will give the operator a four-speed drive and as positive as most any spur gear and would surely be an improvement over the friction drive. Any one can use this method as I have not had it patented, but in case they write me I could give them some good pointers, as one to install this properly should have some arrangements whereby the operator would know when the shifting lever was moved, when the gears are in mesh and what gears are engaged. This arrangement in the hands of a good mechanic could be easily handled, and with a little experimenting and remodeling should make an ideal transmission, and one to give little trouble—V. E. Lane.

BODY TERMS DEFINED

St. Johns, Mich.—Editor Motor Age—Through the Readers' Clearing House will the Motor Age state the exact differences between the following terms: landaulet, coupe, taxicab, and limousine.—Paul Smith.

A landaulet is an enclosed type of body, the top of which is divided into two sections which can be let down or thrown back in such a manner as to make an open carriage. The modern motor car with landaulet body usually seats four inside, having two folding seats in front of the fixed seat. It is so named from Landau, in Germany, where it first was made. A coupe is a permanently enclosed type of body, usually for two persons, but often having folding seats for one or two extra persons. It derives its name from the French verb coupe, meaning, to cut, and is so called because it has the appearance of a larger body cut off. A taxicab is a public vehicle generally having a small landaulet or cab body, and equipped with a taximeter for the prevention of overcharges on the part of the driver and to record the distance traveled. A limousine car is a popular style of enclosed body generally having room for four or five persons in the enclosed portion, two or three on the fixed seat and two on the folding or extra seats; and having two partly open seats in front. The window or partition between front and rear seats is usually capable of being opened or removed at will by lowering into the body. The limousine has a rigid body and cannot be converted into an open car like a landaulet can.

The Readers'

EDITOR'S NOTE—In this department Motor Age answers free of charge questions regarding motor problems, and invites the discussion of pertinent subjects. Correspondence is solicited from subscribers and others. All communications must be properly signed, and should the writer not wish his name to appear, he may use any nom de plume desired.

CONCERNING IGNITION SYSTEMS

Poughkeepsie, N. Y.—Editor Motor Age—I am a regular subscriber to Motor Age and am very much interested in the articles on the mechanism of different cars. I have a light touring car and am considering the purchase of a heavier one in a touring model. There are several points that I would like to be posted on: First, is there any particular advantage in having a double ignition, that is, with a four-cylinder coil and commutator and a magneto? Second, what does Motor Age consider the best system of lubrication, and which is the better of the two, full floating rear axle, or semi-floating, and why? Can Motor Age give me the names of any cars equipped with full floating rear axle, multiple-disk clutch, circulating system of lubrication, thermo-syphon cooling, two sets of spark plugs, L-type cylinders cast in pairs, selective sliding gear transmission amidship, with wheels equipped with a quick-detachable demountable rim?—L. P. Gillespie.

The only advantage a double ignition system has over the more common dual system is that in case of disability of one system the other may be brought into service. The dual ignition system has been brought to such a high state of efficiency that an extra system is not considered as advantageous as in previous years, when perhaps 50 per cent of motor troubles were due to defective ignition apparatus; but for those who desire the best and most efficient, regardless of cost, there is no doubt that a double system is best.

As for the best lubrication system, this is still a question among the most prominent engineers throughout the world. The circulating system is by far the favorite at present, but as there are a number of different kinds of circulating systems, the question still remains unsettled.

When equally well constructed and designed the semi-floating type of rear axle in which the weight of the car is carried by the live axles, and the full-floating type in which the axle casing inclosing the live axles carries the weight of the car, are perhaps equally good; the semi-floating type, however, is more extensively used at present than the full-floating type. The chief advantage of the full-floating type of axle is that by carrying the weight of the car on the axle casing the live axles and the differential and bevel gear mechanisms are thus relieved of these strains. On the other hand, when the semi-floating type can be so designed as to properly take care of these strains it becomes more popular on account of its simpler construction and manufacture; both, however, have other advantages. Motor Age knows of no one car containing all the features which you mention.

COMPLAINS OF VALVES STICKING

Kiel, Wis.—Editor Motor Age—I have a four-cylinder four-cycle 4 by 4½-inch engine in my 1910 car. The valves are on one side. When starting the car, after it has been idle, the valves stick. The stems do not come down at all at times, and at other times so slowly that the rising push-rod, or tappet, strikes the valve stem a violent blow. After running for a while, the valves all work again. I have syringed out the valves from above and below with kerosene but without result. At times only one valve is affected, at other times three or four of them. Will Motor Age tell me what is the cause, and the remedy? The car has run only a few hundred miles and never has been overheated. I drove the same make of car last year 5,000 miles and the valves never stuck once. Will high-test gasoline carbonize cylinders

Clearing House

EDITORS' NOTE—To the Readers of the Clearing House columns: Motor Age insists on having bona fide signatures to all communications published in this department. It has been discovered that the proper signature has not been given on many communications, and Motor Age will not publish such communications, and will take steps to hunt down the offenders of this rule if it is violated

sooner than low-test gasoline?—Subscriber.

There may be two reasons for the valves sticking. The first would be that the clearance in the valve chamber is not great enough so that when the valve is lifted there is not sufficient room, because of the carbon which may be formed on the inside of the valve chamber. This has actually happened with one or two makes of cars put upon the market this year. The trouble is due directly to a faulty design; there is not sufficient clearance between the valve head when lifted and the chamber in which the valve is located. The only solution of your difficulty would be to remove the cap over the valve and seeing if there is sufficient room for the valve to operate. Should this be your trouble, remove the carbon and use a file liberally on the inside of the chamber, so as to give a little additional room. It may be you have lubricated the valve stem, this should operate dry and any oiling of it will create trouble.

CUTOUT FOR STORAGE BATTERY

Conneaut, O.—Editor Motor Age—What is the principle of a cut-out for a storage battery that will cut it out of the line when it is fully charged? I saw such a device mentioned in Motor Age as being made by an American manufacturer who has been experimenting with electric lighting for motor cars. Does the voltage of the generator ever exceed the voltage of the accumulator—that is, when the accumulator is fully charged and generator up to speed?—B. C. Eades, M. D.

Motor Age never has as yet seen a cutout for a storage battery that will cut it out of the line when fully charged, but if you will give us the date of the issue containing the article to which you refer the principle of the mechanism therein described will be explained. In all systems now in operation, means are provided whereby the current produced by the generator can be regulated; this consists of a means of disconnecting or cutting out the generator when the voltage of the current falls below that of the battery or when it becomes excessive for proper charging. A device employed for this purpose generally consists of some sort of a mechanical governor. The voltage of the generator always exceeds that of the accumulator, for if it did not the battery would discharge itself through the generator. In almost all systems where a generator is used for charging a storage battery an effort is made to maintain a proper equilibrium between the amount of current supplied to the battery from the generator, and the demands made upon the battery; and proper indicator mechanisms are generally provided to show the condition of the various features of these systems.

INDUCTION COIL DESCRIBED

Edgeley, N. Dak.—Editor Motor Age—In Motor Age, issue of April 14, in the Readers' Clearing House, I do not clearly understand the answer to the inquiry as to where the secondary current completes its circuit after passing the spark plugs. If it passes back through the timer and primary wire to the coil, would not the secondary current be reversed when the primary is reversed, so that the former would then pass from the primary terminal of the coil directly through the primary wire to the timer, through the timer to the frame and from there to the spark plug? If this is so, I should think that the primary wire to the timer would need to be as heavily an insulated wire as that on the secondary circuit to the spark plugs.—Subscriber.

The secondary current completes its circuit at the spark plug, not after it passes it; it is the completion of the secondary circuit that discharges the current induced in the secondary winding; and it is the discharge across the points of the spark plug that causes the spark. The pressure in the ground connection of the secondary winding of the coil is just as great as that in the wire leading to the plug, but as it is connected directly to the engine a heavy insulation is not necessary. The secondary leading to the spark plug is separated from the engine by the gap between the plug points, and it is to prevent it from meeting the current in the engine at any other point but at the gap in the spark plug, that a heavy insulation is necessary. You, apparently, are laboring under the impression that the secondary current flows out at one end of the winding and in at the other; this is not the case; it flows out at both ends when the circuit is complete, and when a connection or near-connection is made there is a spark. In an effort to make this as clear as possible, another vibrator induction coil construction, or rather the arrangeemnt of the wiring therein, and its relation with other features of the ignition system, is illustrated in Fig. 2. It consists of an iron core C, which is composed of a bundle of soft iron wires; a primary winding P wrapped around this core, and consisting of, perhaps, 200 turns

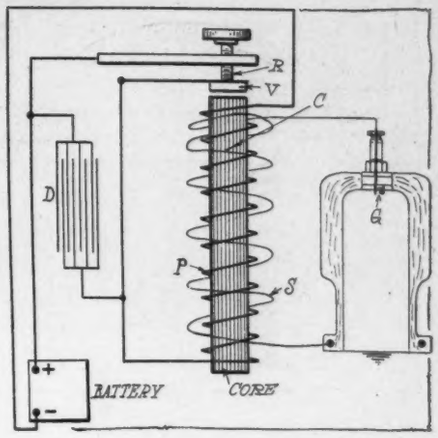


FIG. 2—WIRING OF INDUCTION COIL

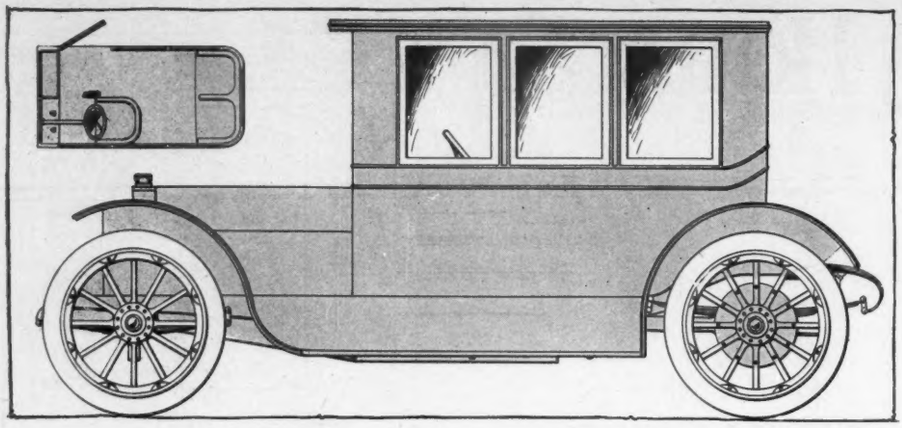
of coarse copper wire, about No. 16 gauge; a contact point at the end of the screw R; a vibrator V, a secondary winding S, surrounding the primary in the manner indicated in the diagram, and consisting generally of between 30,000 and 1,000,000 turns of about No. 36 copper wire. The diagram shows that one end of the primary winding is connected to the battery, the other to the vibrator V, and the condenser D is inserted between the contact points on the vibrator and the contact screw R. The one end of the secondary is connected to the insulated terminal of the spark plug, and the other end is grounded on the cylinder of the motor. Now, when the current is first started in the primary, it magnetizes the core C. Thereupon the iron hammer or vibrator V is drawn away from its contact with R and the current is thus suddenly stopped. This instantly demagnetizes the core and induces in the secondary winding S an electro motive force which is usually sufficient to cause a spark to occur at the gap G, between the points of the spark plug. As soon as the core is demagnetized, the vibrator spring which supports the hammer V restores the contact with R and the operation is repeated. The condenser D, with its two sets of plates connected to the conductors on either side of the vibrator mechanism, is not an essential part of a coil; but when it is introduced, it is found that the intensity of the spark at the plug is considerably increased and sparking at the vibrator contact points is reduced.

LARD AS A LUBRICANT

Potwin, Kan.—Editor Motor Age—Through the Readers' Clearing House will Motor Age inform me if lard is good for transmission grease. How could I make a battery for home treatment—that is, a small battery that can be regulated to give different currents?—J. A. H.

Lard would hardly be considered a good lubricant, as it is an animal oil in which fatty acids are most probably contained that are injurious to the metal of the gears.

Batteries can now be obtained at such a small cost that it would be highly impra-



ENCLOSED BODY DESIGN SUGGESTED BY JOHN JAY IDE

tical to try to make one yourself. Motor Age would advise that you use either dry cells or secure wet cells that you can revive by renewing the materials employed in generating the electricity; then, secure also a switch with two, three or four poles, so that by simply turning the switch you can readily connect up as many of the batteries as necessary to produce the required current. Motor Age cannot design batteries for medical purposes in these columns, as this is a motor car publication, and its space is limited; it would not be fair to other subscribers.

WOULD BE GREAT INVENTION

Morris, Ill.—Editor Motor Age—Why would not a device for preventing motor cars from skidding when a tire blows up, and also protecting the rim be a great invention?—G. H. D.

It would be a great invention inasmuch as it probably would save the lives of many race drivers. It hardly would be practical for universal application, as the throwing of a tire and the skidding therefrom very rarely occurs under ordinary driving conditions. If your invention is designed to prevent skidding on wet and slippery surfaces, however, it might possess sufficient merit to warrant its manufacture and sale. There is no grave danger of a car skidding when a tire explodes if the driver is familiar with the method of controlling a car in such an exigency. Many drivers have controlled cars traveling over 90 miles per hour when a tire has exploded. A device to prevent rim destruction would be valuable.

OFFERS BODY IDEA

New York—Editor Motor Age—Two years ago, on June 18, 1908, Motor Age published a communication from me giving my idea of the ideal car. The body of the car as illustrated in that issue was unique, in that it had high side doors to the front seats. To my knowledge the first American car to adopt this body was the 1910 Rainier. As it has been brought out on the 1911 Packard probably the body will soon become standard. On account of the favorable reception of my first suggestion I venture to submit a drawing of a new body designed according to my latest ideas. At the outset it should be understood that this body is designed primarily for the owner driver, there being no partition between the front and back seats. As the plan shows, three people only are intended to be carried. There is only one entrance serving for all seats, both front and rear, and this entrance is on the right hand side. This feature is made possible by the use of left-hand drive and the suppression of the right front seat. A collapsible washstand takes the place of the right toeboard. The rear seat is divided. The door could be moved back to the center window of the right side if desired. As the body does not extend beyond the rear axle, the back seats are comfortable and luggage space is left in the rear. As there is only one entrance, most of the right and all of the left running board can be used for luggage, etc. Here are listed a few particulars of the chassis: Motor, six-cylinder; bore and stroke, 4½ by 5¼ inches; clutch, multiple-disk; speeds, four, direct on high; selective type change speed gear; brakes, four, concentric internal expanding on rear wheel drums; diameter of outer set, 18 inches; diameter of inner set, 14 inches; tires, 40 by 4½ inches on all wheels; wheelbase, 136 inches; clearance, 12 inches.—John Jay Ide.

RIGHTS OF MOTORISTS

El Paso, Tex.—Editor Motor Age—Will Motor Age kindly give its opinion on the following: "Motor car drivers in this city seldom go to excess, but the best way to prevent offenses against the speed law is to enforce the law rigidly at all times. The fact seems to be generally overlooked that the streets belong to pedestrians and that horse-drawn vehicles and motor cars are allowed to use the streets only by sufferance. Their first care should be for the safety of pedestrians always." I have been under the impression that the sidewalks were for pedestrians and the streets for vehicles, but that drivers of vehicles were bound to exercise reasonable caution to avoid injury to pedestrians who might find it necessary or convenient to cross public thoroughfares. In other words, has the pedestrian any more rights in the streets than vehicles, and is he not equally bound to use caution to avoid injury?

The law covering this is as follows: "Ordinarily a pedestrian has no right of way superior to that of the driver of a motor car, but each may continue in his own course with relative regard for the other's right of travel, and the driver of a motor car is not bound to bring his car to a stop in the absence of proof authorizing an inference that, in the exercise of due care, he had reason to believe that if he proceeded a pedestrian would come in contact with the car, and where it did not appear that, after such contact was inevitable, the driver of the motor omitted anything to prevent that contact there was no liability." The different cases cited in the law show that both the pedestrian and the motor car have equal rights on the road, and that if either party is guilty of contributory negligence they alone are responsible for their acts. The pedestrian has no superior rights on the highway over the motor car.

TOURING INFORMATION

Belmond, Ia.—Editor Motor Age—I am intending to take a tour to Miller, S. D. Will Motor Age, through the Readers' Clearing House columns, give me the best and shortest route?

2—What would I need besides a regular tool kit in the way of equipment for this journey?

3—What is the best dressing for motor car tops?

4—Some time ago I asked what would clean a celluloid storm curtain, and the reply was, "a solution of acetone, and then, after being dry, apply clear lacquer." Is acetone a liquid or powder? How much would it take for a curtain about 3 feet square? If acetone is a powder, what shall I mix it with to form a liquid?—Harry Bohning.

1—Motor Age would suggest that you go north from Belmond, Ia., by way of Goodell, Klemme, Concord, then west through Duncan, Britt, Wesley, Sexton, Algona, Hobart, Whittmore, Emmets B, Crippe, Ruthven, Dickens, Spencer, Everly, Hartley, Waneta, Sanborn, Sheldon, Matlock, George, to Rock Rapids. The route from Rock Rapids, Ia., to Miller, South Dakota, is as follows: From Rock Rapids leave by the main street going west, following the well recognized main road, which shortly turns to the north a little ways and west again into Letcher. From Letcher the main-traveled road leads west to Larchwood. From Larchwood going north and northwest following the main road to Ben Claire; thence west to the Sioux river; thence northwest 1 mile to East Sioux Falls; from East Sioux Falls directly west 7 miles is up hill and down hill, and with the exception of ½ mile passing through the granite stone quarries the road is very fine to Sioux Falls. From Sioux Falls to Miller there are a number of roads, and it is rather difficult to suggest which one to take. At this time of the year they are all good. There is a

road to Mitchell, 75 miles practically straight west, to follow which one would leave Sioux Falls on Ninth street, going west six blocks to Prairie avenue, then north three blocks to Sixth street, thence west on the well-defined road leading out over Covell's lake, northwest along the turnpike, over the Sioux bottom, crossing the Sioux river and thence going north and west following the main road through Hartford; thence west to Humboldt; thence west to Montrose; thence west to Salem; thence west to Spencer, Farmer, Fulton, Riverside, and Mitchell. From Mitchell the road leads through Woonsocket, passing through Letcher. From Woonsocket going straight north would bring one to Huron. Then following the road running along the railroad to Woolsey, which is a trifle north and west of Huron about 8 miles. Miller is about 25 miles north of Woolsey. Another very pleasant route to follow is leaving Sioux Falls and going directly north to Dell Rapids, 20 miles; thence northwest over a rolling prairie road to Madison, thence northwest to Lake Preston and from there directly west to Huron, etc. The roads out in this country radiate a great deal with the railroad tracks. The roads at this time of the year are very fine. Most of them are over natural rolling prairies, smooth as a billiard table.

2—1 or 2 extra tires, tire-chains, a tire repair outfit and blow-out shoes, a few spark plugs and perhaps rope and tackle, would be about all that should be necessary in the way of extra equipment.

3—Miller's harness dressing has been recommended as a good dressing for motor car tops.

4—Acetone is a liquid which can be purchased at almost any drug store, and about 4 ounces should be sufficient for the purpose above mentioned.

OFFERS A WESTERN ROUTE

Madison, S. Dak.—Editor Motor Age—Here is a route from Rock Rapids, Ia., to Miller, S. D., and as the road conditions are very fine, good time can be made over the entire road. Drive due west from Rock Rapids to Lestern, then 1 mile north, and then due west again to Larchwood, where the motorists should inquire for the road to Ben Clair. From the latter place there is a choice of two roads either to Rowena or Valley Springs. When either of the two latter is reached, drive to Brandon and then to Sioux Falls. By missing Brandon 8 miles can be saved, but motorists generally prefer the Brandon route, as the shorter one offers a number of steep hills and many sharp stones. The distance from Rock Rapids to Sioux Falls as given above is 51 miles.

From Sioux Falls, starting at the Cataract hotel, the motorists should go one block west to Main avenue and then straight north past the brewery, and up the so-called brewery hill. This is rather a steep hill, and it may be well to take it on the second gear, but it is best to go on this street, as it offers the most direct and smooth road. Go north about three blocks after reaching the top of the hill and cross a high wooden bridge leading towards the State Penitentiary, which will be passed on the left. The main road should be followed about a mile northeast, when it turns and goes straight north to Dell Rapids, a distance of 20 miles. From Rock Rapids to Dell Rapids the road is somewhat hilly, but not at all bad, and there are some very pretty scenes along the way.

From Dell Rapids there are several roads leading north and west which can be taken until a point is reached 7 miles south of Colman; this place should be passed ½ mile to the south, which is also the case with Wentworth. The road then comes straight west to a point a mile south and a mile east of Madison. The distance from Sioux Falls to Madison is 51 miles. From Madison the route leads through Ramona, Oldham and Lake Preston. At the latter place the Northwestern road is closely followed through DeSmet, Manchester, Iroquois and Cavour to Huron. The distance from Madison to Huron is about 80 miles. From Huron to Miller the best road is near the Northwestern track as before, and leads through Wolsey, Wessington, Vayland and St. Lawrence, the distance to Miller from Huron being 46 miles.—H. H. Frudenfeld.

BAUME AND SPECIFIC GRAVITY

The following table, taken from a publication now in use by the Standard Oil company, may be of interest to a number of readers of Motor Age, and serve to clear up a misunderstanding of the difference between the readings of Baume and specific gravity scales. It appears that there are a number of readers of Motor Age who do not comprehend the difference between Baume scale and specific gravity, so this may be of interest.

Table of Beaume's Hydrometers with Corresponding Specific Gravities

For Liquids Heavier than Water, Temp. 60° Fahr.

Baume	Specific Gravity	Baume	Specific Gravity
1	1.0069	36	1.3302
2	1.0139	37	1.3425
3	1.0211	38	1.3551
4	1.0283	39	1.3679
5	1.0357	40	1.3809
6	1.0431	41	1.3942
7	1.0507	42	1.4077
8	1.0583	43	1.4215
9	1.0661	44	1.4356
10	1.0740	45	1.4500
11	1.0820	46	1.4646
12	1.0902	47	1.4795
13	1.0984	48	1.4949
14	1.1068	49	1.5104
15	1.1153	50	1.5263
16	1.1240	51	1.5425
17	1.1328	52	1.5591
18	1.1417	53	1.5760
19	1.1507	54	1.5934
20	1.1600	55	1.6111
21	1.1693	56	1.6292
22	1.1788	57	1.6477
23	1.1885	58	1.6666
24	1.1983	59	1.6860
25	1.2083	60	1.7056
26	1.2184	61	1.7261
27	1.2288	62	1.7469
28	1.2393	63	1.7682
29	1.2500	64	1.7901
30	1.2608	65	1.8125
31	1.2719	66	1.8354
32	1.2831	67	1.8589
33	1.2946	68	1.8831
34	1.3063	69	1.9079
35	1.3181	70	1.9333

For Liquids Lighter than Water, Temp. 60° Fahr.

Baume	Specific Gravity	Baume	Specific Gravity
10	1.0000	51	0.7734
11	0.9929	52	0.7692
12	0.9859	53	0.7650
13	0.9790	54	0.7608
14	0.9722	55	0.7567
15	0.9655	56	0.7526
16	0.9589	57	0.7486
17	0.9523	58	0.7446
18	0.9459	59	0.7407
19	0.9395	60	0.7368
20	0.9333	61	0.7329
21	0.9271	62	0.7290
22	0.9210	63	0.7253
23	0.9150	64	0.7216
24	0.9090	65	0.7179
25	0.9032	66	0.7142
26	0.8974	67	0.7106
27	0.8917	68	0.7070
28	0.8860	69	0.7035
29	0.8805	70	0.7000
30	0.8750	71	0.6965
31	0.8695	72	0.6930
32	0.8641	73	0.6896
33	0.8588	74	0.6863
34	0.8536	75	0.6829
35	0.8484	76	0.6796
36	0.8433	77	0.6763
37	0.8383	78	0.6730
38	0.8333	79	0.6698
39	0.8284	80	0.6666
40	0.8235	81	0.6635
41	0.8187	82	0.6604
42	0.8139	83	0.6573
43	0.8092	84	0.6542
44	0.8045	85	0.6511
45	0.8000	86	0.6481
46	0.7954	87	0.6451
47	0.7909	88	0.6422
48	0.7865	89	0.6392
49	0.7821	90	0.6363

LOCATION OF GEARSETS

Lincoln, Kan.—Editor Motor Age—Please advise through the Readers' Clearing House how many and what make of cars build the transmission as a unit with the rear axle. Is this as substantial as others where the transmission is a separate unit?—R. E. Curtis.

The following cars carry the transmission on the rear axle: American, Simplex, Black Crow, Cameron, Crawford 10, Everitt 30, Glide, Moon 30, Marmon 32, Mora 20, Courier, Pennsylvania, Regal, McIntyre, Flanders 20, Mathewson Six, Overland, Packard, Stearns 15-30, Clark 30, Clark 40, Continental 35, Marion 10, Morse Radio Whizabout, Rider-Lewis, Senator, Sterling, Welch model R, Correja, Only Car, Templeton Du-Brie, E-M-F 30 and Anchor. When properly designed this construction should be equally as substantial as when otherwise located.

OILING UNIVERSAL JOINTS

Streator, Ill.—Editor Motor Age—Will Motor Age explain how to oil a universal joint on an E-M-F 1910 model with a cone clutch? Does it get oil from a grease cup or the gearcase, or must the leather and sheet iron cone be removed in order to apply same? What kind of lubricant should be used on a joint near the clutch? —W. S.

The universal joint between the clutch and the transmission of the 1910 E-M-F cars is incased in leather and packed in grease. It is only necessary to remove partially the leather case and repack with grease when lubrication is necessary. There is no necessity of removing the cone of sheet iron for this purpose. Any good grade of hard grease is suitable for the lubrication of these parts.

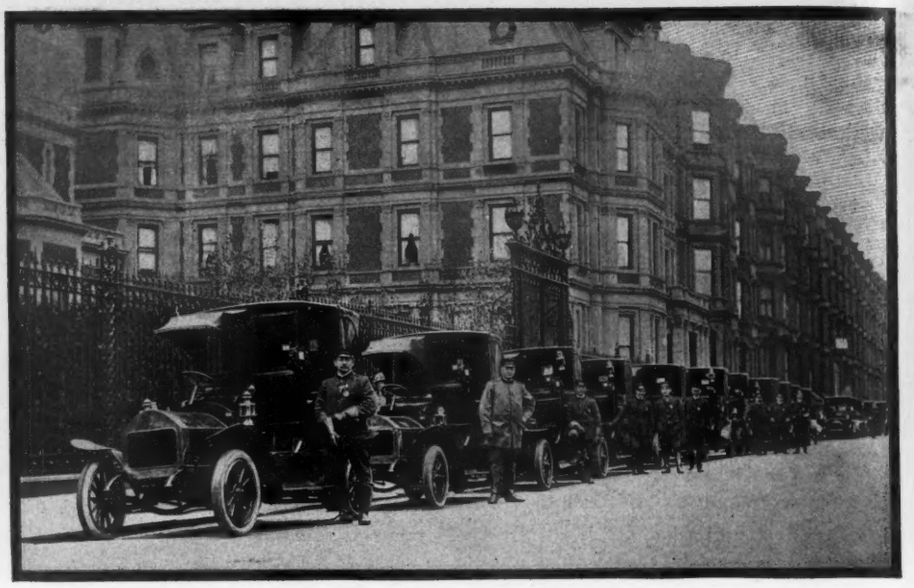
CARRIES GLASS SAFELY

THAT it is possible to safely transport plate glass over country roads in a motor truck was demonstrated in an effective manner recently, when Tyler & Hippach, of Chicago, dealers in glass, sent a load from their warehouse to Joliet, a distance of 40 miles, without a mishap. The glass consisted of two big plates each 21 feet 4 inches long by 8 feet wide and 5-16 inch thick, weighing 2,900 pounds, the glass being carried in a special rack designed for the purpose. The truck left Chicago at 4:30 o'clock in the morning and reached Joliet at 11:30, after a delay of 1 hour occasioned by engine troubles experienced with the touring car which accompanied the truck. In Joliet the glass was set and the truck returned to Chicago, reaching that city at 10:30 o'clock in the evening.

The truck that made this creditable performance was one furnished by the Atterbury Motor Car Co., of Buffalo, through its agents, W. B. Ingwersen & Co. It is a four-cylinder, 50-horsepower vehicle, using a selective type of transmission and with a loading space of 14 feet by 41 inches, while the bed of the truck is only 25 inches from the ground. The rack which it carries is 140 inches from the ground. The truck itself weighs 6,400 pounds. The wheels are 34 by 4 front, carrying Diamond tires, and 34 by 3½ duals in the rear, fitted with Kelly-Springfields. The length over all is 19 feet and the wheelbase of the truck is 144 inches.

TESTS OWN TAXIMETERS

New York city has just put into force a new law which is designed to prevent overcharge on the part of drivers of taximeter cabs, having appointed seven inspectors whose duty it is to investigate all complaints. To demonstrate the accuracy of the taximeter instrument, however, Joseph W. Jones, inventor of the taximeter, of that name, gave a public demonstration of the reliability of his device the day before the new law went into effect. Thirty-three of his instruments were tried out on as many taxicabs, which ran over a stated distance. At the end of the test an examination showed that the thirty-three instruments registered almost identical figures.



TAXIMETERS LINED UP FOR RECENT NEW YORK TEST

In the Realm of Commercial Cars

COMMERCIAL BREVITIES

The city of Sacramento, California, has just placed in commission a combination motor police patrol and ambulance. The car is a Rambler, equipped with 45-horsepower engine and built upon the large Rambler chassis.

The Universal Motor Truck Co., of Denver, Colo., has decided to locate its factory at Newcastle, Ind., where, it will be remembered, is located one of the motor car plants of the Maxwell-Briscoe Motor Co. Newcastle citizens have subscribed for $30,000 worth of stock in the truck company. The company will combine with the Safety Shredder Co., which has experimented with pleasure cars, and the factory buildings will be enlarged.

Beloit, Wis., has its first motor truck. F. W. Dupke & Co., decorators, painters, etc., have placed a light delivery car in service, and the experiment is being watched closely by merchants and other prospective buyers at Beloit.

William L. Hibbard, of Milwaukee, Wis., has been appointed district representative of the Grabowsky Power Wagon Co. in Wisconsin. Mr. Hibbard formerly was president of the W. L. Hibbard Motor Car Co.

In a decision recently handed down by Attorney-General Bird, of Lansing, Mich., a taxicab is held to be a common carrier, and as such all taxicab companies will have to make application to the state railroad commission for permission to increase or decrease its capitalization. This decision was the result of an application by the Detroit Taxicab Co. to increase its capital stock from $5,000 to $100,000.

With a ½-ton W. M. C. motor truck Lohnson & McChesney, of Whitewater, Wis., recently negotiated a cream route for the Union Produce Co., of Whitewater, in 1 hour 50 minutes, whereas the fastest time ever made over this route by a team of horses was 5 hours 20 minutes. In addition, the truck carried 1,757 pounds of cream on a carrying capacity rated at ½ ton. The following day the truck was demonstrated for J. C. Coxe, a department store, and did a full 10 hours' work without a hitch, in addition to making more deliveries than two wagons have been able to accomplish. The truck is a new product of the Whitewater Machine Co.

SACRAMENTO'S COMBINATION POLICE PATROL AND AMBULANCE

JOSEPH W. JONES TESTING TAXIMETERS ON NEW YORK TAXICABS

America As Italian Dealer Sees It

MILAN, May 25—An Italian dealer was asked a few days ago what he thought of the American cars in general and the chances of selling them in Italy. He said: "American cars are much better than the average European thinks. In fact I prefer several of the medium-priced cars which do not cost more than $1,500 to $1,750 than some of the well-known European cars selling at twice those prices. I think the American runabout and the light touring car would find a sale here. It must, however, be well understood that they would at first have to be tried in public to show the people. Why do the American manufacturers who seek foreign trade not enter some of the contests which are held annually in Europe? We know they are much interested in touring events in their own country. We have heard of the annual Glidden tour, of the San Francisco to New York record runs, of the car which covered 160 kilometers daily for 100 days, of the fastest American stock car. Why are not such cars sent to Europe to compete here? Who knows but that they would be as successful here as in their home country? And then it would be a much easier matter to get a strong footing with American cars in Europe.

"Among us here in Europe the competition is very keen but still all the cars of one country are pretty well known in another, except for the new ones and they always are quickly entered in races or other contests so as to make a name for themselves. That is the method in general in Europe and it will have to be the method American manufacturers will have to follow if they want to sell their cars here.

"The number of cars sold in Italy is yet very small. It is true that the people in general are not as wealthy but there are nevertheless many who will buy a motor car when the price will be within their means. This means that it must be a car which will not cost more than 5,000 lire, or $1,000. If the cars are offered fully equipped with all the needed accessories, in fact ready to be used on the spot, and even if they cost 10 per cent more, I think they would sell very well. However, it is necessary that the car be first well introduced, that it be shown to the people what the car will be able to do."

The duty levied against motor cars coming into Italy is 200 lire or $38.60 on a car weighing 500 kilos or 1,102 pounds or less, $77.20 if the car weighs from 501 to 1,000 kilos or 2,204 pounds, and $115.80 on cars weighing more than 1,000 kilos.

According to the United States consul general's records, the Italian motor car business in 1909 was not as brilliant as in 1908 from a financial standpoint. From a numerical point of view it was the best year the Italian manufacturers have had, as they exported 2,158 cars as against 1,629 in 1908 and 1,283 in 1907. However, the average price of the car exported last year was only $2,051 or $1,294 less than the average price of the 1908 car and $984 less than the average price of the car exported in 1907. In that year the total value represented $3,895,765, in 1908 the sum was $5,449,692 and in 1909 it was $4,427,697. The United States occupies the second position on the list as far as the number of cars is concerned, having bought 416, while in 1908 only 179 went to America and in 1907 fifty-two. As in 1908 Great Britain was the best customer of Italy, taking 708 cars. France bought 177, Germany 150, Argentina Republic 138 and Switzerland 75.

Last year 327 cars were brought into Italy, their value being $583,331, or an average price of $1,784 for each. In 1908 348 cars were imported at a total value of $840,413, or an average price of $2,445, while the 725 cars imported in 1907 were valued at $1,594,403, or an average price of $2,200 each. In 1909 three more cars were imported from the United States than in 1908 when the total was four, while in 1907 it was fifty-two. Most of the foreign cars brought into Italy came from France—213, in 1908, 238, and in 1907, 473, the records show.

According to the consul general, there is a possibility of marketing American runabouts which sell from $800 to $1,200. For high-grade cars there is not much of an opening. The best and only practical way to sell American cars in Italy is to send over or secure in Italy a representative to demonstrate the good qualities of the machine. One American house following this plan has this season sold a good order in several Italian and other European cities, and there is no reason why others couldn't do the same.

ATTERBURY TRUCK DESIGNED TO CARRY PLATE GLASS FOR CHICAGO CONCERN

From the Four Winds

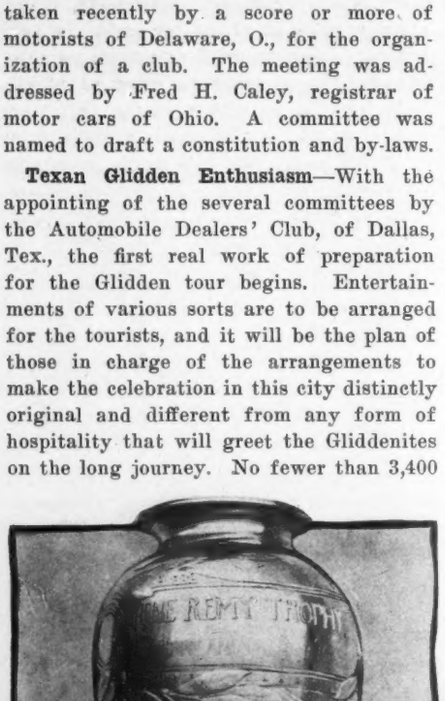
BENZ Signs Robertson—George Robertson will drive a Benz in the Vanderbilt, the Fairmount Park and the grand prize road races.

Club at Mount Vernon—A movement is on, backed by motorists of Columbus, O., and adjoining cities, for the organization of a club at Mount Vernon, O.

Wisconsin Registrations—On June 1 the Wisconsin registration reached 12,740, and applications are coming at the rate of forty to sixty a day. This is the best motor car year Wisconsin ever has experienced.

Still Another—Preliminary steps were taken recently by a score or more of motorists of Delaware, O., for the organization of a club. The meeting was addressed by Fred H. Caley, registrar of motor cars of Ohio. A committee was named to draft a constitution and by-laws.

Texan Glidden Enthusiasm—With the appointing of the several committees by the Automobile Dealers' Club, of Dallas, Tex., the first real work of preparation for the Glidden tour begins. Entertainments of various sorts are to be arranged for the tourists, and it will be the plan of those in charge of the arrangements to make the celebration in this city distinctly original and different from any form of hospitality that will greet the Gliddenites on the long journey. No fewer than 3,400 cars will be in Dallas on Glidden day. Many of the Dallas dealers have issued instructions to their out-of-town agents to come in for the celebration on June 22.



THE REMY SPEEDWAY TROPHY

Erecting Sign Posts—The Iowa Official Transcontinental Route Association has set about establishing a line of sign posts from Council Bluffs, Ia., to Clinton and to improve and maintain the highway between those two cites. It is placing signs 8 by 24 inches at every crossroad, each sign being 8 feet from the ground.

Mrs. Otis Plans Campaign—Mrs. Kenneth R. Otis, of Cleveland, is planning to start her season of long-distance driving next Monday, when she will leave Buffalo for a 900-mile run to St. John, Quebec. Mrs. Otis will ship her car to Buffalo and make her start from that city some time in the afternoon. The second day's run will be from Syracuse to Albany. The drive from Albany to St. John, a distance of 280 miles, will be completed on the third day. Mrs. Otis will be accompanied on the trip by Miss E. Yost, who has been her companion on numerous journeys.

Shorten the Route—The Buick pathfinder which 2 weeks ago went over the tentative route through eastern Missouri and western Illinois for the St. Louis Automobile Manufacturers' and Dealers' Association's 3-day reliability run for the Star trophy, has made a second trip with the idea of shortening the course. It was decided that the original route, as planned, was too long for a 3-day run. The trip was finished Saturday from Mexico to St. Louis, 103 miles, through mud part of the way hub-deep. Frank Tate, chairman of the contest committee, has sent out entry blanks for the reliability run which is to be June 28, 29 and 30. The entries will close June 23.

Club at Gooding—Motor clubs and alfalfa alike flourish in the sage brush country, and both are seemingly prolific in their growth. The Gooding Motor Club, just organized, has its headquarters where 2 years ago there was nothing but a lonely ranch house, a railroad siding and an occasional sheep herder to relieve the monotony. Today Gooding is a city of 2,500 inhabitants, with electric lights, telephone, 15 miles of cement sidewalk and all the conveniences to be found in cities of ten thousand population in the eastern states. Motor cars are plentiful in the town, and many of the ranchers use this vehicle instead of horses and wagons. The Gooding Motor Club starts with a charter membership of twelve, and the motor ranchmen of Lincoln county are sending in their applications, so that the club promises to reach fifty or more before the summer closes. The officers of the club are: President, Judge J. D. Furcht; vice-president, Dr. W. H. Johnson; secretary, Robert W. Spangler.

Getting Climb Entries—Entries for the hill-climb to be given by the Automobile Club of Port Jefferson, N. Y., on the Long Island course of the club, are coming in at a satisfactory rate. A demand has been made that the club include an event for cars with piston displacement of from 230 to 300 cubic inches and such action will probably be taken. The climb takes place June 25.

Omaha Wants Fair Show—Omaha motorists are pushing a movement in favor of a show at the Nebraska state fair this year, and hope to have a building set apart for the exhibition of motor cars. Nebraska farmers are heavy buyers of motor cars, and manufacturers undoubtedly would welcome an opportunity to display their cars to a farmer clientele, the only opportunity to do so on a large scale being at a state fair.

Bisons Choose Dates—At Saturday's meeting of the contest and runs committee of the Automobile Club of Buffalo, it was decided that the proposed reliability touring contest will be held under the auspices of the club on September 7, 8, 9 and 10. The tour will start and finish each day at Buffalo, and the distance will be approximately 200 miles each day, and the same territory will not be covered twice. Entry blanks will be out this week, and entries will close on July 15.

Echo of Lowell Road Race—Somewhat of a stir has been created in political circles in Middlesex county, Mass., over charges that last fall blankets and mattresses owned by the county and belonging to the Lowell jail were used during the Lowell races at the Vesper Country Club and a revenue derived from them of which the county got nothing. It is also charged that some of the jail officers patrolled part of the course for the club. An investigation has been asked from the attorney general.

Approves Restrictive Bill—William J. Gaynor, mayor of New York, has refused to withhold his sanction to the Cullen-Goodspeed bill, which restricts the ocean parkway, the main highway to Coney Island, from Twenty-second avenue to King's Highway, as an exclusive speedway for horsemen. Arguments against the bill were presented to the mayor last Thursday by a delegation from the Licensed Dealers' Association and others, but Mayor Gaynor decided to endorse the bill. A movement headed by the Automobile Club of America, Long Island Auto-

mobile Club and the Licensed Dealers' Association has been started to oppose the enactment of the measure by the signature of the bill by Governor Hughes.

Seeking Beach Entries—J. W. Munn, of Galveston, Texas, started on June 1 on his path-finding tour of the state of Texas in the interest of the beach races to be held on Galveston beach, August 3, 4 and 5. He will visit Dallas, Fort Worth, Austin, San Antonio, Houston and Beaumont.

Holds Moonlight Run—The Wilkinsburg Automobile Club, of Wilkinsburg, Pa., made one of its most successful moonlight runs recently to the home of its president, Dr. W. R. Stephens, of Llonfa. Forty-one cars joined in the run and there were 200 guests present. The first regular daylight run of the club was made to Butler, Pa., June 4.

Another Club for Chicago—The North Shore Automobile Club, of Chicago, has been formed with W. P. Rice president, E. Pfennig vice-president, W. R. Gross secretary and G. Fleck treasurer. The club is open only to amateur drivers and has a clubhouse at 1338 LaSalle avenue. Fifteen members are on the books and the club will join the Illinois State Automobile Association.

Aviation Interferes—Because it was believed that motor cars on the track would interfere with the aeroplanes, the motor car races in connection with the aviation meet which will be held at Churchill Downs, Louisville, June 18 and 19, has been called off. After consultation with several experts it was found that the track is not well-fitted for this class of speeding, as the turns are not banked, and the sport would be too dangerous for the drivers.

Meet for Memphis—Friday, June 17, will be a red-letter day with the motorists of Memphis, Tenn., and surrounding country. The Glidden tour is to arrive that afternoon and in celebration of the event a race meet will be held at the fair grounds under the management of Homer C. George. This meet was postponed from May 21. Seven races, with a 50-mile event as a feature, will be run off at the meet. Entries have been secured from the Marmon, Cole, Westcott and several others.

Interesting the Farmers—The business men of Milford, Pa., have formed the Milford Good Roads Association, the object of which is to improve the roads leading to Milford and keep them in better condition than in the past. A membership fee of $1 is charged, and with the fund raised the association will purchase eight split-log drags, which, as an experiment, will be used on the 8-mile road leading from Milford to Frederica, under the direction of an engineer from the bureau of roads, at Washington. The association will arrange with eight farmers living along the road and have them use the drags after each rain, being first instructed by the engineer. Each man will have a mile of road to look after. Some will give their services free, while others will have to be paid.

Big Club Run—The Wisconsin Valley Automobile Club held its annual sociability run on Memorial day, the route being from Wausau, Wis., to Merrill. Stevens Point was the objective point of the first annual run in 1909. The tour was go-as-you-please, and fifty-two cars participated.

No Motors in Roosevelt Parade—When Colonel Roosevelt comes home there will be no motor cars in line to receive him. At least there will be none in the parade which will be an important part of New York's reception plans. Major General Roe, in charge of the parade, thinks the motor cars cannot go slowly enough, and as he is in charge, the committee bows to his wishes to use carriages instead of motor cars.

Under Three Flags—On Monday, a stock Flanders 20 roadster started from the factory for Quebec, there to start on a long trip to the City of Mexico. The intention is to show the ability of the little car to stand up under any road conditions met with in the three countries, for which reason the tour has been named the Under Three Flags reliability. In the car are W. H Lane, of the factory, as driver and pilot, and Paul H. Bruske, the new contest manager.

Boosting Membership—Plans for increasing the membership of the Automobile Club of Washington are being formulated by the membership committee. The club now has a membership of 160, and it is desired to add at least 100 more names to the rolls. The club also will secure the services of a competent lawyer to defend any members who are unjustly arrested for violating the motor car ordinances of this city and the two adjoining states of Maryland and Virginia.

New Speedway Trophies—The Indianapolis speedway has two new trophies this year, both of which were put up for competition for the first time at the recent meet. One of them was the speedway helmet which was won by Burman in a Buick and the other the Remy brassard and cup which went to Harroun in a Marmon. The helmet is offered for a 5-mile free-for-all race, and must be defended at the July, August and September meets. The helmet carries with it a salary of $50 a week from May 30 to Thanksgiving day, and one of the conditions is that the holder must wear the helmet while he is defending it. The Remy race is at a distance to be set by the speedway people. It was open in the May 30 race to stock cars of the 231-300 class, but in subsequent events the limit is to be increased to 450. In the race of August 12 both the brassard and trophy go to the car leading at the end of the first 150 miles. The driver gets the brassard which is worth $50 a week to him and in case he uses a Remy magneto this value is increased to $75 per week. The trophy goes to the maker of the car and is valued at $2,500.

BURMAN WEARING SPEEDWAY HELMET

Will Give Up Trophy—Reports that the Buick Motor Co. would refuse to give up the Cobe trophy because it will be run on the Indianapolis speedway instead of the road are denied. The Buick company has informed the Chicago Automobile Club that it will at once forward the cup.

Syracuse Club's Growth—The membership of the Automobile Club of Syracuse, N. Y., is growing. Thirty-five new members were admitted at the meeting the past week. This brings the total to 520, and already there are nearly twenty applications awaiting consideration. On July 1, 1909, there were only 237 members.

Parade for Fond du Lac—Fond du Lac county, Wis., owners plan to hold a monster parade in Fond du Lac on July 4 as the feature of the Independence day celebration. Silver trophy cups and cash prizes will be awarded. At the twin ports carnival to be held by Superior, Wis., and Duluth, Minn., on July 4, a huge motor parade will be held under the auspices of the Superior Motor Club.

Pennsylvania Recruit—Twenty-five owners of Ellwood City, Pa., have formed the Ellwood City Automobile Club with these officers: President, A. C. Frey; vice-president, C. F. Buchanan; secretary, D. H. Muchaly; treasurer, J. W. Offutt. The club will wage an active campaign for good roads and will act in conjunction with the Lawrence County Automobile Club, of New Castle, Pa., which has offered a prize for the best piece of road made in that county this year.

TEST OF SPEEDOMETERS

NEW YORK—Editor Motor Age—We submit herewith a full text of the report of variations in speedometer readings owing to changes in temperature. The tests covered in the reports were conducted at Columbia university by George B. Pegram and Barton W. Kendall.—Jones Speedometer Co.

The tests were made on three speedometers, one of the centrifugal type—Jones—and two of the magnetic type—Stewart and Warner—in April, 1910. The three speedometers were mounted on a wooden base, and then placed inside a tin box about 15 by 12 by 10 inches. This box was provided with a glass top and had a 1½-inch tube running out from one end at the bottom, through which tube the flexible shafts connected with the speedometers. The box was set inside a large cylindrical tank, with 3-inch high wood blocks under the box. The temperature of the speedometers was varied from the temperature obtained by surrounding the box with a mixture of ice and salt, to a temperature attained by filling the tank with water up to the top of the speedometer box and heating as much as desired by a gas stove underneath the tank. The temperatures were read by two thermometers in the speedometer box, with bulbs right against the metal cases of the speedometers.

Manufacturers'

The readings of the thermometers never differed from one another more than a degree, and as the rate of change of temperature was slow, not more than 10 degrees per hour during the measurements, it is evident that the temperature within the box was sensibly uniform for the purposes of these tests.

The flexible shafts of the speedometers were geared to a shaft run by an electric motor, with suitable arrangements for varying its speed. The mean actual speed during any one set was measured by timing the revolution counter on the end of the motorshaft and computing the speed that the instruments should properly show on the basis that 2,560 revolutions per minute of the motorshaft corresponded to a 60-mile-per-hour speed for the speedometers. This factor 2,560 was obtained by comparing the mileage run off on the speedometers with the number of revolutions as given by the revolution counter on the shaft.

In taking readings of three instruments at a certain speed and temperature the motor was adjusted to run at about the speed desired, the temperature read, the speedometers read in succession until four readings of each had been recorded by one observer, while the other timed the number of revolutions of the shaft, from the hundred nearest the beginning to the hundred nearest the end of the series of readings of the speedometers; finally the temperature was read again. In the accompanying tables each of the speedometer readings then is the mean of four readings taken during the observation at that speed of temperature. The readings of any one speedometer during one set of readings did not vary more than 1½ mile per hour and in most of the set were constant so far as could be observed by the university experts.

The results of the tests are shown in tables 1 and 2 and a set of temperature error curves, and may be summarized as follows:

Speedometer I, Jones No. 168,295—A centrifugal type instrument—It was hardly to be expected that within the range of temperature variation used in these experiments the changes in the dimensions of the parts and in the elasticity of the springs would have much effect on the readings of the instruments. Running 60 miles per hour this speedometer reads 2 miles per hour higher when at 137.5° Fahrenheit than when at 16.3° Fahrenheit. The difference in reading is approximately proportional to the difference in temperature, and to the actual speed. We may express this by saying that the difference in reading per degree difference of temperature is .00028 of the speed. For a temperature difference of 60° Fahrenheit the temperature error hardly would be detectable at moderate speeds, and small even at 60 miles per hour.

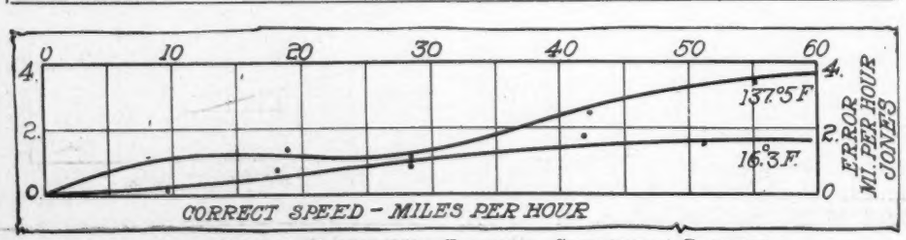
Speedometer II, Stewart No. 13,558—A magnetic type instrument—In this instrument the poles of a magnet rotating under an aluminum disk generate currents in the disk. The reaction of these currents on the magnetic field supply a torque to the disk, which is nicely pivoted and restrained by a hair-spring. The torque is proportional to the strength of the induced currents in the disk and these to the rate of rotation of the magnet. The disk therefore is pulled around against the reaction of the hair-spring through an angle proportional to the speed of the rotating magnet, which angle is indicated by a pointer on the mile-per-hour scale. This speedometer shows a marked and fairly regular variation in its readings with variations in temperature. At low temperature, 16.3° Fahrenheit, it reads too high throughout the scale by about 16⅔ per cent. At high temperature, 137.5° Fahrenheit, it reads too low by about 15 per cent. It would read correctly throughout the scale when at a temperature of about 83° Fahrenheit.

The variation in the reading per degree change of temperature is .27 per cent. When used in a car the variation in the temperature of the speedometer between summer and winter is likely to be as much as 62° Fahrenheit, which would mean a discrepancy of 10 miles per hour between summer and winter readings when actually going 60 miles per hour; a discrepancy of 5 miles per hour when actually going 30 miles per hour. According to this speedometer a car would show much better speed in winter than in summer.

Since the reading of this instrument is proportional to the induced currents in the disk, and these are inversely proportional to the resistance of the disk, the variation of the resistance with temperature must affect the speedometer readings. The temperature of coefficient of the electrical resistance of aluminum is .0021 per degree Fahrenheit. This will account for only part of the variation per degree, namely, .0027, in the speedometer readings. The rest is doubtless to be accounted for by the decrease in the strength of the magnet as the temperature increases. With properly made magnets this change is very small, but as the torque on the disk depends on the square of the magnetic field intensity, the variation in the strength of the magnet means double the variation in the speedometer reading.

TABLE 1—TEMPERATURES AND SPEEDS AT WHICH TESTS OF SPEEDOMETERS WERE MADE

Temperatures				No. of rev. during test	Time in seconds	Speed, in miles per hour—2560 rev. per min.=60 miles per hour
Beginning	End	Mean Cent.	Mean Fahr.			
				800	118.0	9.6
				1400	107.8	18.3
— 8.5	— 9.0	— 8.75	+ 16.3°	3100	151.2	28.8
				4000	135.2	41.6
				3600	98.4	51.5
				1000	124.0	11.3
				1100	77.4	20.0
+ 8.0	+ 10.1	+ 9.0	48.2°	1800	90.6	27.9
				3500	111.6	44.1
				3400	90.0	53.1
				600	84.2	10.0
				1200	86.8	19.4
21.5	22.3	21.0	71.4°	1500	72.0	29.3
				3000	98.0	43.0
				2800	69.2	57.0
				900	125.7	10.1
				1000	74.6	18.8
41.5	42.4	42.0	107.6°	1800	85.0	29.8
				2300	74.2	43.6
				3300	82.2	56.5
				400	67.5	8.3
				800	59.2	19.0
60.2	57.0	58.6	137.5°	1600	78.3	28.7
				2700	89.0	42.6
				4000	101.0	55.7



CURVE SHOWING TEMPERATURE EFFECT ON SPEEDOMETER READINGS

Communications

Speedometer III, Warner No. 12,097—A magnetic type instrument—The construction and behavior of this instrument are essentially the same though the effect of the temperature is not so large, as in the case of the Stewart meter. The variation in the reading per degree change of temperature is .0022. This can be almost wholly accounted for by the temperature of coefficient of the electrical resistance of the aluminum disk.

DEFINES LONG-STROKE MOTOR

Syracuse, N. Y.—Editor Motor Age—Many people have a wrong impression about the relative value of long-stroke and short-stroke motors. A saving in weight, economy of fuel and ability to attain higher speed are some of the characteristics which make the short-stroke better suited to motor car work. Some have the idea, it must be explained, that any motor is a long-stroke motor if the stroke is longer than the bore, even if it is only an inch or a fraction of an inch longer, as it is in one type of the Franklins. The Franklin motor car of 18-horsepower has a 3⅜-inch bore with a stroke ⅝-inch longer. On the Franklins of 28 and 42-horsepower the engine has a 4¼-inch bore and 4-inch stroke. These are all short-stroke motors, as are those made by all American manufacturers with possibly one or two exceptions.

As indicating the relative weight of the two kinds of motors, a comparison may be made between air-ship motors. These are extremely light and in many cases are air-cooled, like the Franklin. Figures compiled for twenty-four aeroplane motors, giving bore, stroke, weight of motor, weight of engine per horsepower and ratio of stroke to diameter of piston, show that the long-stroke motors have the greatest weight per unit of power developed. In several of the makes the weight of the engine per horsepower is less than 4 pounds, and in each of these cases the ratio of the stroke to diameter is about one, showing that the motor car has a short stroke. On the other hand, the engine which is heaviest per horsepower, 6.6 pounds, has a long stroke. Only three out of the entire number have a stroke more than an inch longer than the bore.

A motor car engine cannot be called long stroke unless it has a 6-inch or 7-inch stroke with a 3½-inch or 4-inch bore.

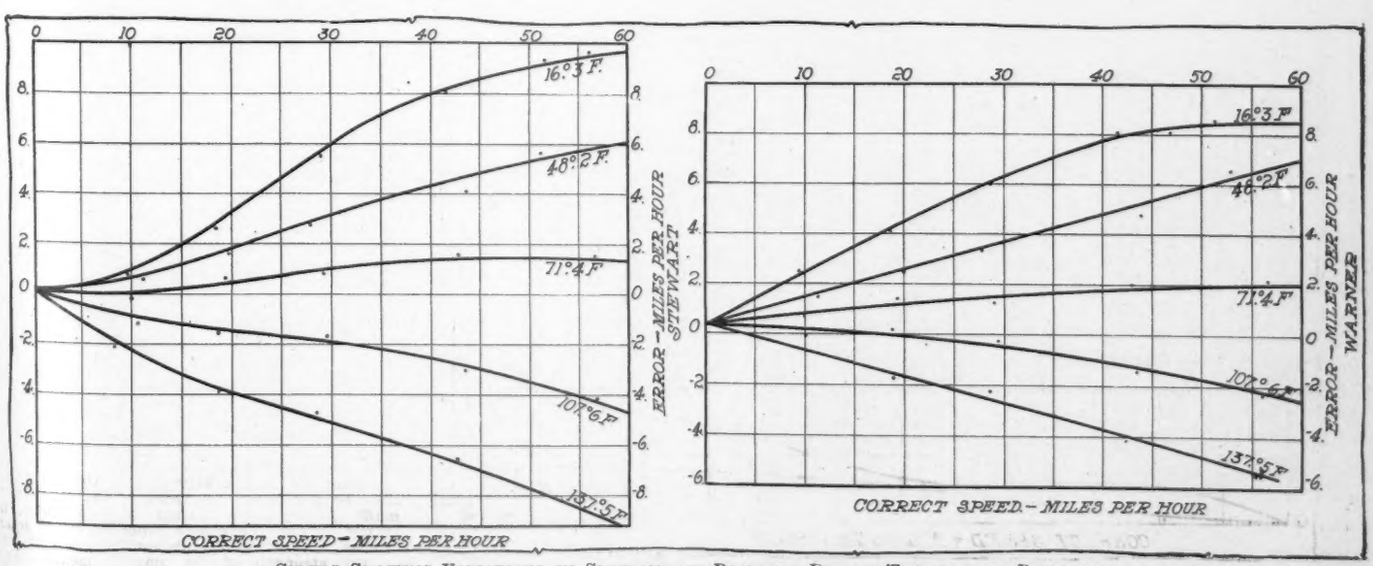
An engine having bore and stroke nearly equal, as in the case of the Franklin, is advocated as the most powerful for its weight that can be produced. The reason for its low weight is that it can be built with shorter connecting rods, shorter, lower cylinders, smaller crankcase and lighter flywheel. With lower cylinders the center of gravity is lowered. With a short lever arm the stress on gears, universal joints and drive shaft is much less. The motor can be cranked more easily and accelerated more quickly. It is more flexible because it has greater possible variation in revolutions than has a long-stroke motor. A higher speed can be maintained because the short-stroke motor makes a greater number of revolutions for any given distance which the piston travels.—H. H. Franklin Mfg. Co.

RAIN DID NOT SLOW RACE

New York—Editor Motor Age—In the issue of Motor Age containing an account of the last 24-hour race at Brighton Beach, it was stated that the record was not broken on account of rain in the afternoon. I wish to call your attention to the fact that the rain did not start until about the sixteenth hour, and at that time the leading car was still behind the record made by the Lozier car in last October's race. In fact at no time during the entire 24 hours, either before or after the race, were the former records reached by any of the cars in the last 24-hour race. The rain was one of short duration, and while the track for a short time was made a little slow, the general effect was to improve it, as the rain laid the dust and put the track in better shape for the last 5 hours of the contest.—Lozier Motor Co., C. A. Emise.

PIERCE-ARROW WATCHFULNESS

Buffalo, N. Y.—Editor Motor Age—An inkling of the lengths to which motor car manufacturers have to go to protect their names is shown by an order issued recently at our plant that hereafter all parts such as castings and forgings that have been rejected by the inspection department must be broken up before being sent to the scrap heap. Behind the order lies a rather unique instance of pervented enterprise on the part of a certain Buffalonian. It came to the ears of one of the officials of the Pierce-Arrow company a short time ago that a Pierce-Arrow motor was for sale by a man in no wise connected with the motor car business in Buffalo. It was thought decidedly worth while to investigate the matter and this investigation developed that the so-called Pierce-Arrow motor was one almost entirely built of parts that had been rejected at the plant and sold to a dealer in scrap. A man with some knowledge of motor car assembly had bought these parts from the scrap man, done some machine work on them and given his product the high grade label. Many of the parts used were but a little more than a thousandth of an inch out of accurate measurement and, although they were serviceable for the purpose for which they were used, had not been up to Pierce-Arrow requirements and were accordingly thrown aside. The factory took the necessary steps to stop the sale of the so-called Pierce-Arrow motor and these were followed at once by the order to break up all scrap, a thing that is expected to make another such experience impossible in the future.—Pierce-Arrow Motor Car Co.



CURVES SHOWING VARIATIONS IN SPEEDOMETER READINGS DUE TO TEMPERATURE READINGS

The Motor Car Repair Shop

Hints for the Amateur

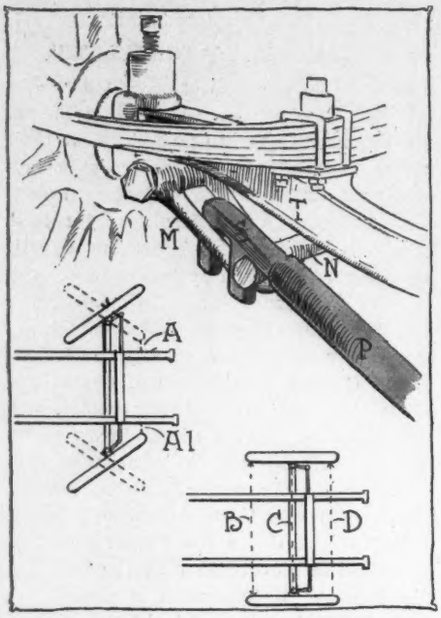


FIG. 1—ADJUSTING FRONT WHEELS

ALMOST every repair shop nowadays should be provided with a safe and convenient means of cleaning up motor car parts with gasoline or kerosene; and a visit to some of the up-to-date shops or agencies recently constructed in Chicago will show that some have gone to no little expense in equiping themselves for this purpose. In Fig. 2 is shown the cleaning outfit now in operation in the repair department of the Chicago Pierce-Arrow agency. It consists of a large steel structure, large enough to conveniently hold any part of the motor car except the frame; an air-pressure pump, a reservoir for the cleaning fluid, and a hose connection leading therefrom with adjustable nozzle by means of which a powerful stream or spray of the cleaning fluid may be directed onto the surfaces and into the corners of a mechanism to clean it thoroughly of all grease, grit or dirt that might be clinging thereto.

In operation the air pump P is driven from an overhead pulley on the shaft which supplies power to the machine tools, by means of the belt B on the flywheel F. The compressed air passes to the reservoir R by way of the pipe E; and a safety valve S is provided in case the pressure in the reservoir exceeds a certain limit. The pressure in the reservoir forces the fluid out through the hose H. By means of the valves C the proportions of the mixture of air and cleaning fluid which passes through the hose can be regulated; while the force of the stream itself can be regulated by means of a valve on the nozzle N. A vent pipe V of large diameter extends from the top of the cabinet which is provided with a forced draft for carrying off the fumes of the gasoline, when used; and a door D closes the cabinet completely when not in use. Provisions are made for draining the cleaning fluid from the cabinet, and after straining it, it is replaced in the reservoir. The top of the reservoir is funnel-shaped as indicated by the dotted line T, to facilitate refilling when the plug L is removed. A strainer also is provided just below the plug.

Straightening a Steering Arm

When a motor car comes into the repair shop for a general overhauling or, as is often the case, to be simply looked over, the experienced repairman always will examine the wheels to see if they are running parallel or as near parallel as they should run, and also that the steering connections are all in good shape and so adjusted that the wheels will turn just as far in one direction as in the opposite direction. It often occurs with an irreversible type of steering gear, that the steering arm M, Fig. 1, will be slightly bent by running into a curb or some other obstruction at an angle. This will throw out the steering mechanism so a car will be able to turn at a much smaller radius in one direction than in another, or in other words while turning in one direction a complete turn can be made in a comparatively narrow street while in the other direction a series of maneuvers and gear-changing would be necessary before the turn could be made. The steering rods of a motor car should be adjusted so when the steering gear is turned as far as possible in one direction, the distance A in Fig. 1 should be equal to the distance A1 when turned to the limit in the opposite direction. This distance may be easily measured with an ordinary rule between the felloe of the wheel and the side member of the frame as shown. A difference of an inch or more will change the turning radii considerably, and unless the steering knuckle N is adjustable the steering arm M must be brought back to its original position by means of a bending bar S with the pipe P on the handle of it to increase the leverage if necessary. A very small bend in the steering arm can generally be eliminated without heating the part. If, however, the arm is badly bent it should be heated to a cherry-red and then restored to its proper shape. Work of this kind should not be attempted by the amateur or unskilled workman, for the life of the occupants of the car may depend upon the efficiency of this part, and much damage may be done by improper bending, or heat treatment. A fact that perhaps is not universally known is that the front wheels should not be exactly parallel but that the distance B in the sketch at the lower right-hand corner of Fig. 1 should be greater than the distance D by about ⅜ inch. This, it is claimed, facilitates steering and does no damage to the tires.

Don't Neglect Loose Bearings

It is claimed that more harm can be done to a motor by running it with loose bearings for a few days than would result from a year's ordinary use. Therefore, do not neglect a knock that is noticeable when the motor is called upon to do a little extra work. A large repair bill can often be saved if the bearings in the motor are given timely attention.

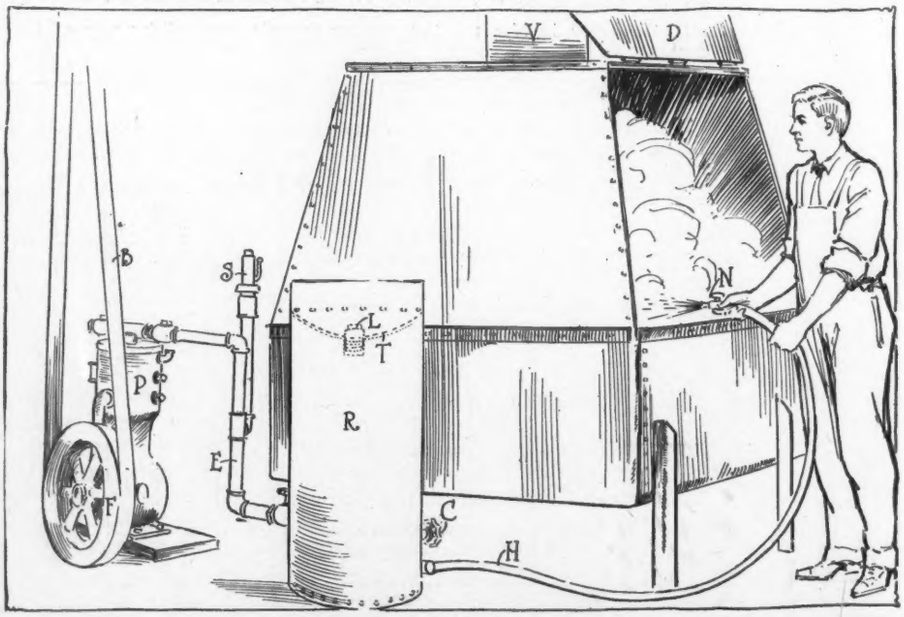


FIG. 2—CLEANING MOTOR CAR PARTS IN REPAIR SHOP OF CHICAGO'S PIERCE-ARROW AGENCY

Current Motor Car Patents

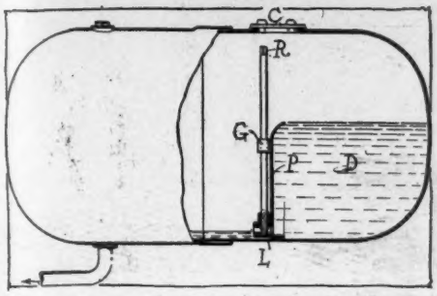


FIG. 1—FUEL TANK WITH RESERVE SECTION

Liquid Fuel Tank—No. 958,025, dated May 17; to Joseph A. Steinmetz, Philadelphia, Pa.—This patent relates to a liquid fuel tank such as is used on motor cars, having a reserved section adapted to be used to prevent an unintentional shortage in the gasoline supply. It consists, as shown in Fig. 1, of a tank containing a partition P forming two compartments, a valve mechanism attached to the partition for controlling communication between the two compartments, an outlet at the bottom of the main compartment, and an inlet C through the top of the tank over the partition arranged so that both compartments can be filled simultaneously. As shown in the illustration, D represents the reserved supply of gasoline, and in case it is necessary to use this supply a key may be introduced through the filler opening C onto the end R of the valve stem which is supported in the guide G, and by turning it the valve L may be opened; whereupon the reserve supply will flow into the main portion of the tank.

Rotary Valve—No. 957,285, dated May 10; to Robert White, Beaver Falls, Pa.—This patent covers a simple type of rotary valve construction, the details of which are shown in Fig. 4. It consists of a combination of a cylinder C and a conical valve casing S, with a main port P between them and a conical rotary valve V journaled in the casing, as illustrated. The valve is provided with inlet and outlet ports, which are placed in communication alternately with the main port as the valve is revolved. A white metal expansion washer N, designed to move the valve longitudinally when the parts become heated, is arranged at the smaller end of the valve, and a ball-thrust bearing is fitted between this washer and the lower end of the valve casing. A valve of this sort if it can be made to operate successfully greatly simplifies engine construction and does away entirely with valve noises, as there is no reciprocating motion. The valve would be driven by means of bevel gears from a shaft which might occupy the same position as the camshaft inside of the crankcase on an L type motor, and instead of two cams for the two valves generally employed a single gear would serve to operate the valve. Almost any size valve opening desired could be obtained by regulating the length of the slots or ports in the valve, and if the valve itself does not serve as a pocket for the burned gases the idea might be a very good one.

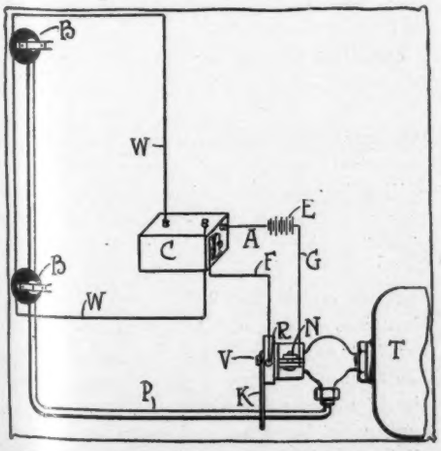


FIG. 2—ELECTRIC IGNITION FOR GAS LAMPS

Electric Igniter for Gas Lamps—No. 957,951; dated May 17; to Charles L. Haase, Jr., Milwaukee, Wis.—The system of gas lamp ignition covered by this patent is shown in Fig. 2, and consists of an acetylene gas tank T, a combined valve and ignition switch V, a gaspipe P leading to the burners B, a battery E, a vibrating coil C and high-tension wires W also leading to the burners. In operation when the removable valve key K is turned so that the gas valve is opened, contact is simultaneously made in the collar R and the primary circuit closed; thus the current flows through the wire A, the coil C, the wire F, the connection N and the ground wire G back to the battery E; while the secondary current which is being induced in the coil is conducted to the jump spark terminals at the burners B through the wires W.

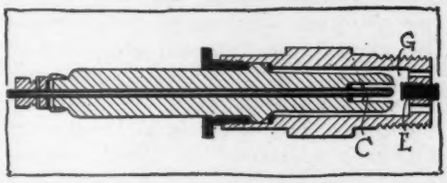


FIG. 3—ADJUSTABLE SPARK PLUG

Adjustable Spark Plug—No. 958,247, dated May 17; to Frederick J. Heasel, Cincinnati, O.—The spark plug covered by this patent is shown in Fig. 3, and it differs from other forms of spark plugs in that the electrode E is adjustable, being threaded into the shell of the plug and provided with a slot at its outer end for the insertion of the blade of a screw driver. This feature provides a means for regulating the spark gap G between the electrode E and the insulated one C. Otherwise the plug is of conventional design. It is a combination of a cylindrical casing open at the outer end, and closed at the inner end by a perforated wall; exteriorily screw threaded at the end which screws into the cylinder of the motor, and having internal threads at the opposite end for the reception of the packing gland. The high-tension electrode is mounted in an insulating plug in the regular way, as is the insulating plug in the shell.

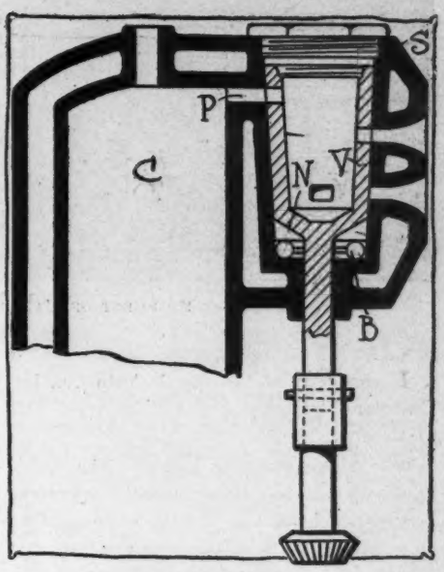


FIG. 4—A NEW ROTARY VALVE

A Simple Motor Car Top—No. 958,183, dated May 17; to Albin Schreiber and Otto Meister, Untermhaus, near Gera, Germany—This patent relates to a motor car top which has but one main bow B permanently attached to the rear seat in the regular way. The advantage of this style of top is that, owing to the absence of another main bow for attachment to the front seat as in the tops now in use, the operation of raising the top and securing it into position is greatly simplified. This arrangement of the bows in top construction is particularly adapted to the short-coupled body construction which is now becoming so universally popular.

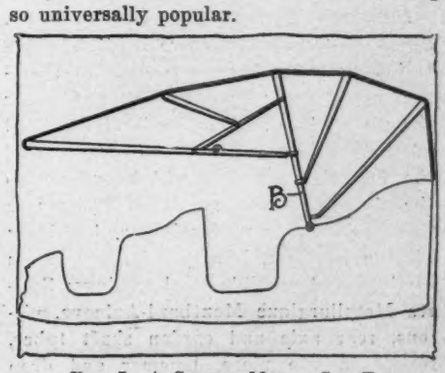
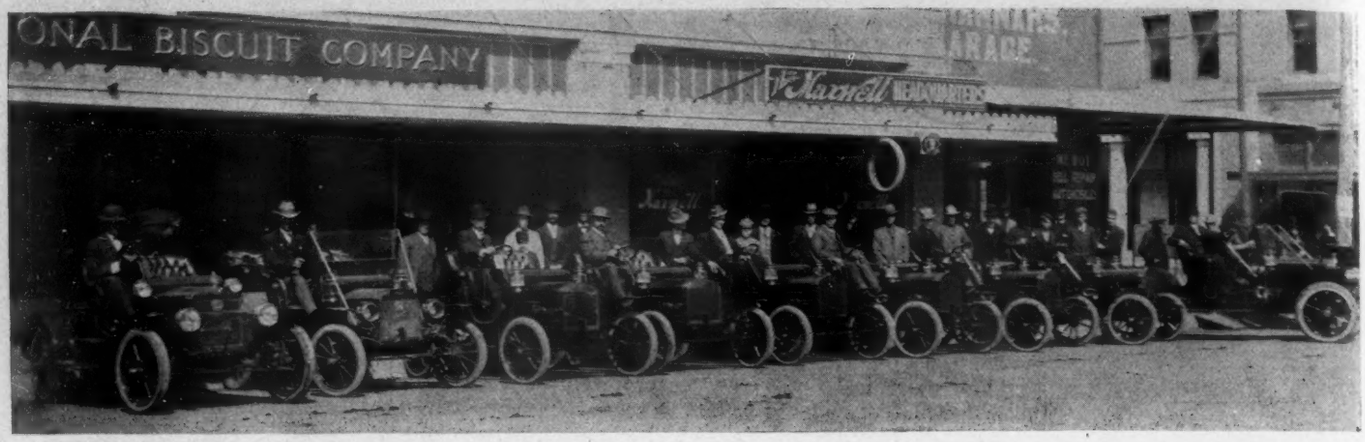


FIG. 5—A SIMPLE MOTOR CAR TOP



SHIPMENT OF MAXWELLS RECEIVED BY PERRY PERCY & CO., MAXWELL AGENTS AT WACO, TEXAS

Among the Makers

GAETH Going Abroad—Paul Gaeth, president of the Gaeth Auto Co., left Cleveland Tuesday for a 2 months' trip to Europe.

Will Make Starting Device—The Sands Specialty Co. has been recently organized in Cleveland for the purpose of marketing an improved form of the Sackman starting device. The inventors are W. H. and C. M. Sackman.

Diamond Conference Held—Branch managers of the Diamond Rubber Company recently held a conference in Akron. Among the branch managers who attended the conference were E. P. Weber, Boston; E. H. Fitch, Philadelphia; N. E. Oliver, Buffalo; L. K. Ritterhouse, Pittsburg; C. B. Myers, Cleveland; C. H. Smith, Chicago; W. E. Roby, Minneapolis; H. J. Lee, Atlanta; E. B. Tozier, Cincinnati; A. L. Gustin, Kansas City; H. J. Woodard, New York; J. G. Goudie, Detroit, and C. E. Matterson, San Francisco.

Winton Homecoming Week—The annual homecoming week of Winton branch managers, salesmen and traveling salesmen was held in Cleveland at the Hotel Euclid during the week of June 6. Winton employes to the number of fifty from agencies extending from Boston to Seattle attended the meeting. Eleven branch managers and fourteen traveling salesmen were present. Business sessions, sports and social affairs were the features of the meeting. The selling policy of the Winton company and the 1911 car, the features of which will be announced July 1, were discussed.

Handling French Parts—The French Steel Products Co. is the title of a corporation that has been organized to represent some of the French makers of motor car material. J. K. White is at the head of the new company. The productions of the following concerns will be offered to the American trade: Jacob Holtzer & Co., steels for gears, forgings and springs; Plichon Brothers, iron cylinder and piston castings and crucible steel castings; Societe Metallurgique Montbard-Aulnoye, pistons, rear axle and cardan shaft tubes, forged in one piece, hammer and drop forgings; Forge Persan Beaumont, front axle forgings and chassis springs. The French Steel Products Co. also will offer the MAB ball bearing.

Making the Vickers—The Vickers Auto Car Co., of Coshocton, O., has completed its first car which will be called the Vickers. The machine is a runabout with a four-cylinder two-cycle air-cooled motor. Carl Vickers, proprietor of the Vickers repair shop, backed by E. H. McMasters, of Bellaire, O., is at the head of the enterprise.

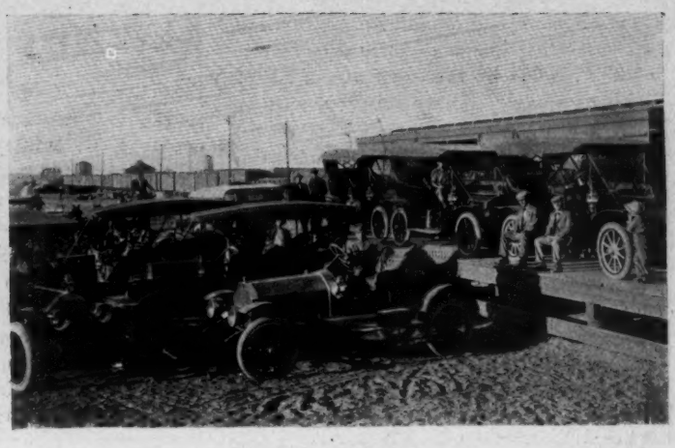
Cleveland Enterprise—Manager Hipp, of the Cleveland Regal agency, will extend an invitation to Cleveland Regal owners to an outing party to be held June 12 at Vermillion, a town about 50 miles from Cleveland. The object of the run is the better acquaintance of Regal owners. About twenty-five owners of Stearns cars left the Stearns factory in Cleveland Saturday on a run to East Aurora. Elbert Hubbard and his Roycroft inn played a prominent part in the entertainment. Week-end runs will be made each week by Stearns owners. Manager J. M. Rauch, of the Cleveland Hupmobile agency, will hold a run from Cleveland to Geneva-on-the-Lake June 12. Fifty owners of these cars will participate.

FRANKLIN MOTOR CAR CO., PHILADELPHIA

One More for Fisher—Carl G. Fisher, of Indianapolis, who is president of the Indianapolis Motor Speedway Co., and is identified with the Prest-O-Lite Co., the Empire Motor Car Co. and the Globe Realty Co., which is building a $1,000,000 motor row, has decided to still further extend his business interests. He is preparing to erect and establish a modern garage at Logansport, one of the most promising cities in northern Indiana.

Royal in Line—The Royal Rubber Co., one of the newer rubber plants of Akron, will soon start the erection of extensive additions to its plant, which occupied the old buildings of the Empire Mower and Reaper Co. The Royal company proposed to increase its output to include motor cycle and motor car tires. Up to the present time it has confined its output to druggists' supplies. O. C. Alling, of New York, is president of the company, J. H. Baird, New York, vice-president and superintendent; T. O. Evans, Akron, secretary, and J. C. Gibson, Akron, treasurer and general manager.

Overland Output for 1911—President J. N. Willys, of the Willys-Overland Co., declares that it is expected to turn out 25,000 cars from the Toledo and Indianapolis factories for the 1911 season. Said Mr. Willys in this connection: "Atlanta territory, which last year took 600 cars, has signed a contract for 1,000 cars. Texas, which took 1,250 cars in the 1910 season, has contracted for 2,000 cars. The San Francisco agent, who last year contracted for 500 cars, has signed a contract for 1,500 cars. Other contracts are being signed up to show almost as great a percentage of increase, and we estimate now that we will turn out in the two plants 25,000 cars in the 1911 season." Mr.



MOTORING CONDITIONS AT ROSWELL, N. M.—ROSWELL GARAGE AND A SHIPMENT OF CARS

and Dealers

Willys practically admitted during this interview that the Indianapolis plants will be ultimately removed to Toledo, although this action will not be taken immediately.

Big Business in May—The report of Ohio's state registrar of motor cars for the month of May shows that 3,170 owners registered their cars, at a cost of $15,614. Manufacturers and dealers to the number of thirty were registered and chauffeurs to the number of 550. The total revenue of the department for the month was $17,283.50.

Hoosiers Make a Trip—About 130 business men identified with the Indianapolis Trade Association made a 500-mile trade extension trip over northern Indiana last week, visiting thirty cities and towns. The party traveled in four interurban cars, except about thirty-five men, who took advantage of touring cars provided by the Overland Automobile Co. and made a pleasant motoring trip out of the excursion. One of the features of the trip was a banquet at South Bend, where Carl G. Fisher spoke in favor of road construction under state control, saying he was willing to spend considerable money to effect such a plan.

Indianapolis Garage Law—An ordinance governing the establishing and erection of garages in Indianapolis has been passed by the city council and signed by Mayor Shank and will become effective as soon as the proper publication has been made. The measure is a substitute for one that was introduced some time ago and which practically prohibited the erection or location of garages in the residence districts. The new ordinance provides that all garages erected or established in the future must be in fireproof buildings and that in the residence districts the buildings must stand back from the street on a line with the dwellings on either side. It is also provided that a garage may not be erected or established within 150 feet of any church or school building erected or established prior to the erection or establishing of a garage.

Mitchells for Hawaii—The Mitchell-Lewis Motor Co., of Racine, Wis., made a shipment of a carload of Mitchells to the Hawaiian Islands on May 26.

Napier Agency in Boston—In the description of the British Napier cars printed in last week's issue of Motor Age it was erroneously stated that the American agency of these cars was in New York, instead of Boston, Mass.

School for Aprentices—The H. H. Franklin Mfg. Co. has established an apprentice school at its South Geddes street plant, in Syracuse, a 4-year course of instruction being provided for youths between 16 and 20. The system includes practical shop work and book instruction, with a graduated wage ranging from 8 cents hourly at the beginning to 20 cents at the close, with a $100 bonus when diplomas are awarded. A Purdue university graduate will act as instructor. The concern has maintained a department for the instruction of repairmen, chauffeurs and salesmen. Its success led to the present step.

Lambert Hollander Retires—The partnership heretofore existing between William Gray and Lambert Hollander, under the firm name of Gray & Davis, of Amesbury, Mass., has been dissolved by mutual consent. Mr. Hollander believes that he has been in harness long enough, having reached the age of 60, and that he deserves a rest, and will sail for Europe about July 1. Mr. Hollander's interests have been bought for cash by S. Preston Moses, of Boston, Mass., who is a close personal friend of Mr. Gray's, and the business will be carried on by William Gray and S. Preston Moses, as Gray & Davis.

Detroit Changes—John W. McCrea, for the past 2 years state supervisor for the Winton Motor Carriage Co. has resigned this position to become secretary of the Standard Sales Co., of Detroit, a reorganization of the Winn-Brown-Jewett Co. The concern deals almost exclusively with motor car manufacturers. F. O. Durfee recently joined the sales staff of the Owen Motor Car Co. and will have charge of the southern and southwestern territory, including Tennessee, Alabama, Mississippi, Florida, Arkansas, Oklahoma, Texas and New Mexico. H. B. Harper, of the Ford Motor Co., has succeeded R. M. Lockwood as manager of the foreign departemnt.

INTERIOR OF GARAGE OF FRANKLIN MOTOR CAR CO., OF PHILADELPHIA

Owner Furnishes Interesting

THAT motoring is not necessarily the costly pastime most persons believe it to be is proved by the exact account kept in his own case for very nearly a year by a methodical business man. This record shows that the actual total cost of maintaining a light five-passenger touring car and running it nearly 9,000 miles during the first year of ownership was just $1 less than $500. Figured out, this makes the average cost per mile of use 5.64 cents, everything included. The itemized statement is presented herewith, and it makes an interesting study.

In view of the experience of hundreds of others, this record calls for a good deal of explanation. Those who want to know how it was done will no doubt get a number of valuable pointers that may be of use not only to men who are contemplating the purchase of motor cars for the first time, but also to others who already own machines.

To begin, then, it should be stated that the car to which this record applies was a light touring car of 20 horsepower seating five adults of average size without uncomfortable crowding and costing only about $1,000. To avoid the suspicion that this information is obtained from or is in any way influenced by the manufacturer, the name of the car is purposely omitted. As a matter of fact, the record of expense was kept by the owner for his personal satisfaction and was given to the writer for publication only upon the latter's solicitation and with the stipulation that the owner's identity should be concealed and the name of the car mentioned only with the consent of the manufacturer. This consent has not been sought or given.

Gets Cheap Garage Rates

This was the first motor car ever bought or used by the owner, who has a salaried position in a managerial capacity with a large company in Chicago that keeps him exceedingly busy. Although he drove the machine himself, he kept it in a public garage and did not attempt to take care of it in person or to make repairs. Instead, however, of paying the usual monthly rate for storage and care, he made an arrangement whereby he paid the garage $5 a month simply for storage and paid an additional $1.25 for having the car washed and polished whenever ordered. He also paid the regular price per hour for all other labor as ordered. Part of the time gasoline cost him 15 cents a gallon, but later the price was raised to 16 cents.

A considerable percentage of the mileage was made on the city boulevards, but another large percentage was made on long runs into the country in Illinois and extending into Indiana and Wisconsin. On practically all of the country runs the car was occupied to its full capacity and was driven a great deal of the time at its normal high speed. In the city it was used quite regularly to drive to and from the office, on many of which trips it carried three or four passengers. In the evenings, on holidays and on Sundays it was used extensively for taking friends and acquaintances for drives, the owner being unusually generous in this respect.

It will be seen, therefore, that the car was used almost to its full capacity and was not nursed and spared as a matter of economy. Neither was the owner an adept in the handling of machinery, beyond having been a consistent rider of a bicycle for many years. In short, there was nothing unusual in the way the machine was used that would tend to keep down the cost of operation and maintenance. On the contrary, it was driven considerably more than most owners would run a car, 9,000 miles being a high mileage for the first year. Yet the car is now in splendid condition, or was up to the end of the period covered by the record, when it was turned in as part payment on a new and larger machine. At the end of the 11 months' period it was running better than during the first few months of possession, and, in fact, was a better car.

Garage Help Must Be Tipped

In strict good faith it should be stated that the account does not include fees or garage charges for care of the car when it was driven down town and left until the return of the owner in the evening. The item of fees is, however, quite a large one as the men at the garage where the machine is kept regularly have to be tipped rather liberally.

In the further consideration of the various items that appear in the account, it will be most convenient to take them in the order in which they occur.

It has already been stated that the cost of fuel was 15 and 16 cents a gallon. It was a matter of pride with the owner to see how many miles he could get out of a gallon of fuel, not for the saving effected but as evidence of his increasing ability as a driver. From the following table it will be observed how the consumption decreased as he became more proficient with the throttle and spark levers:

MONTHLY AVERAGES OF FUEL CONSUMPTION

Month	*Miles per gallon	Miles run
April, 23 days	12	620
May and June, each	14	2,066
July	16	1,570
August	16.7	758
September	16.9	891
October	19.55	792
November, engine in bad order	16	561
Total miles		7,258

*Grand average, 16.

Matter of Fuel Economy

The foregoing record is incomplete but suffices for the purpose, and serves to indicate that in the matter of gasoline, at least, a motorist's expense should be less per mile after the first year's ownership of a machine. The maximum gasoline economy in the case under consideration was on a run to Crown Point, Ind., in June, to attend the Cobe and Indiana trophy races. The round trip of 144 miles, with the car fully loaded, was made on 6 gallons of gasoline, or an average of 24 miles to the gallon. This excellent showing was due in large measure to the fact that the car was driven a great part of the way by an expert who was thoroughly familiar with this make of machine. It indicates, however, that in time the owner could reasonably expect to average not fewer than 20 miles to the gallon, effecting a saving of 20 per cent in his fuel bill.

The item of oiling and greasing covers engine and transmission oil, greasing front wheels and differential and keeping the grease and oil cups on the car supplied. It includes the cost of oil and grease and payment for the labor involved.

The entire cost of lighting the car for the period of 1 year, lacking 5 weeks, was

TABLE SHOWING YEARLY COST OF

Total mileage, 8,833

Item	
Gasoline	
Oiling and greasing	
Charging batteries and lamp renewals	
Washing and polishing	
Storage, garage at $5 a month	
Licenses, state and city	
Insurance, fire and theft	
Sundries	
Tires and tire repairs	
Miscellaneous repairs	
Spark plugs and coils	
Fines	
Drivers	
Total cost	

Total gallons of gasoline used, 563

Recent Motor Car Literature

"Good Roads, How to Build, Preserve and Make Them Dustless," is the title of an interesting forty-page book issued by the Barrett Mfg. Co., Chicago, in the interests of Tarvia, a road preservative and dust preventative. The various illustrations show macadam roads constructed with the different grades of Tarvia.

"Safeguards" is the title of book which the Aetna Life Insurance Co., Hartford, Conn., has published, the purpose of which is to call attention to the many dangers surrounding employes in the industrial world. The book gives many suggestions for the prevention of accidents, illustrations of safeguards, and shows methods adopted in different plants to guard dangerous machinery and places.

Rand, McNally & Co. have issued a touring map of the "Country Surrounding Chicago," covering Cook, Lake and Dupage and portions of Will, Kane and McHenry counties. Good and bad roads are clearly shown.

"Bulletin No. 390" from the National Brake and Electric Co., Milwaukee, Wis., describes and illustrates in detail its National governors, types N, R and A.

R. M. Owen & Co. have just issued their

Facts About Car Maintenance

MAINTENANCE OF TOURING CAR

	Total cost	Av. cost per mile
	$ 87.68	$0.01 —
	26.49	.003
	10.13	.0012—
	80.25	.009 +
	53.85	.006 +
	22.00	.0025+
	20.00	.0023—
	26.85	.003 +
	79.37	.009 —
	46.93	.0053+
	26.95	.003 —
	13.00	.002 +
	5.50	.0565—
	$499.00	Av. per mile..$0.0564+

Miles run per gallon of fuel, 15.69

$10.13 for charging batteries and making lamp renewals. The lighting was exclusively electric, with current from a storage battery, and the equipment comprised two 6-inch headlights, two combined oil-and-electric side lights, a combined oil-and-electric tail lamp, and also a small electric light over the speedometer.

Explanation already has been made of the arrangement entered into for storage and washing and polishing in the garage. The charges for licenses and insurance are fixed and cannot be reduced, although these items will vary greatly according to the state and city in which the motorist lives and also in proportion to the power and cost of his car.

It is of the greatest interest to note carefully the actual cost of tire renewals and repairs. Tire upkeep often is thought to be the largest item in the cost of keeping and using a car, secondary at most to the cost of garaging. But in this particular case the cost for tires was slightly less than $80 for a total mileage of 8,833 miles, or an average of .9 cent a mile. It is generally conceded that tires of large size in proportion to the weight and capacity of the car are the more economical, yet the machine under consideration was equipped with 30 by 3-inch front and 30 by 3½-inch rear pneumatics to carry five persons. The item of $79.37 for tires and tire repairs covers two new front and one new rear casing, vulcanizing punctures and cuts in inner tubes and outer casings and labor in changing tires.

Two new casings were put on after the car had been run between 3,000 and 3,500 miles and were used continuously ever since. The casings that they replaced were repaired, one being vulcanized and the other retreaded. One of the original casings, after being run more than 7,000 miles, blew out on a trip into the suburbs in the last week in November and both it and the other casing, which had been used ever since the purchase of the car, were discarded. When the record closed on March 1 the other rear casing was nearly gone, but both front tires—replacements—were in good condition.

Thus, it is safe to say that this new motorist has been getting 7,000 miles of service out of these small tires with a car heavily loaded most of the time. While his actual tire expenditure was only $79.37, it is probable that had he kept the car and its record for the full period of a year the worn-out rear tire would have had to be replaced at a cost of $33 to $35, making a complete set of four new tires for 9,000 miles' service in the first year.

Expense of Tire Upkeep

On the basis, then, of a full new set of four outer casings and four new inner tubes, at a cost of approximately $110, the average per mile tire cost has been 1.56 cents. But the tire manufacturers' guarantee is for only 4,000 miles, equivalent to 2.75 cents per mile; and if to this is added the cost of repairs, the expense of tire upkeep would be practically 3 cents per mile. Naturally, on this basis, the owner of the car showing the record given feels considerably elated.

The item, miscellaneous repairs, embraces all repairs that the owner has had to pay for except tires and spark plugs and coils, which are separately enumerated. The amount is made up of charges for labor in replacing a stripped gear in the differential on a trip into Wisconsin last summer, repairing a blown-out gasket on the engine on a trip in Illinois, and similar jobs on the road.

The cost for repairs would have been very much larger except for the fact that the branch house of the manufacturer never made any charge for labor or replacements except spark coil vibrators. The owner states that he believes he had a great deal more trouble with his car than most users, due, probably, to the fact that he received one of the early deliveries of the new model, which was improved in the later machines delivered. Judging from the few cars he saw in the repair department of the store and from what he heard from other users of the same make and model, he thinks there is no doubt that others had better success with their cars than he did. This very likely accounts for the liberality of the company in his case, although it is customary, of course, for manufacturers to furnish replacements free of charge where defective materials or workmanship develop during the first year.

Troubles of the Owner

Following is an itemized list of the troubles the owner had with this particular car:

Large gear in differential stripped.
Differential gear bolt sheared off.
Engine gasket blown out.
Leaky engine gasket.
Spark plugs fouled.
Thread on rod from spark lever to commutator stripped twice.
Carbureter troubles that necessitated changing it two or three times.
Two spark coils burned out.
Oil leaked from differential casing and axle housing onto rear brake bands and from there onto tires.
Thread stripped on bolt holding brace from front axle to transmission case.
Connecting hose replaced twice.
Body tilted on rear spring twice.
Blades of fan loosened.
Pump runner renewed.
Commutator replaced.
Eogine valves ground and carbon removed from cylinders several times.

Notwithstanding these troubles, the purchaser was well satisfied with his car and, as already observed, it was running better at the close of the first year of possession than when new. The fouling of the spark plugs occurred mostly during the early part of the period and is attributed to the use of too much lubricating oil in the cylinders. The leaking of oil from the differential onto the tires was remedied by drilling holes on the under side of the axle sleeve on both sides of the differential casing.

The item of spark plugs and coils that appears in the account includes six new vibrators costing $7.80 that were bought in anticipation that the old ones, which were about worn out, would have to be discarded, but at the time the record closed the replacements had not been made.

Only One Fine Assessed

Although the owner of this machine enjoys the exhilaration of fast driving when it is safe to indulge in it, he is really a law-abiding citizen and is in sympathy with the speed-limit law. Therefore, while the item of fines appears in his expense account, it is inserted by him without mortification, as it was not incurred by himself or any member of his family, but by a guest in the car who was driving at the unlucky moment.

Recent Motor Car Literature

annual spring number of the Reo Echo. It is a 7 by 10 brochure containing forty-eight pages of reading matter on a score or more of timely topics, which are illuminated by numerous bright half-tones. Among the many ably written articles are "The National Good Roads Movement," "The Blue and the Gray," "The Farmer and the Automobile," "A Private Glidden Tour," "The Rise of R. E. Olds," "Hiawatha Brought Down to Date," besides numerous other timely and popular articles.

The Great Smith for 1910 is featured and described in the latest catalog from the Smith Automobile Co., Topeka, Kas. The three models, touring, toy tonneau, and cruiser, are illustrated.

"My But It's Shocking" is the title of an eight-page booklet from the Hartford Suspension Co., Jersey City, N. J., which is the tale of four jars with a peaceful ending published in the interests of the Truffault-Hartford shock absorbers.

"What Is the Selden Patent?" is a pamphlet being distributed by the Association of Licensed Automobile Manufacturers, which is a dissertation on how the Selden patent affects the private owner.

COPPER-ALUMINUM ALLOYS WITH MANGANESE

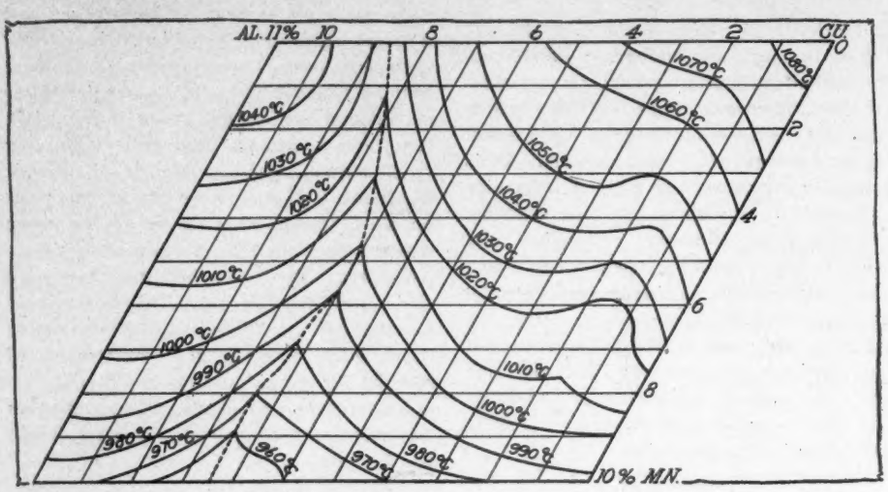


FIG. 33—CONTOUR LINES OF LIQUIDUS SURFACE OF ALLOYS OF COPPER WITH ALUMINUM AND MANGANESE UP TO 11% MANGANESE

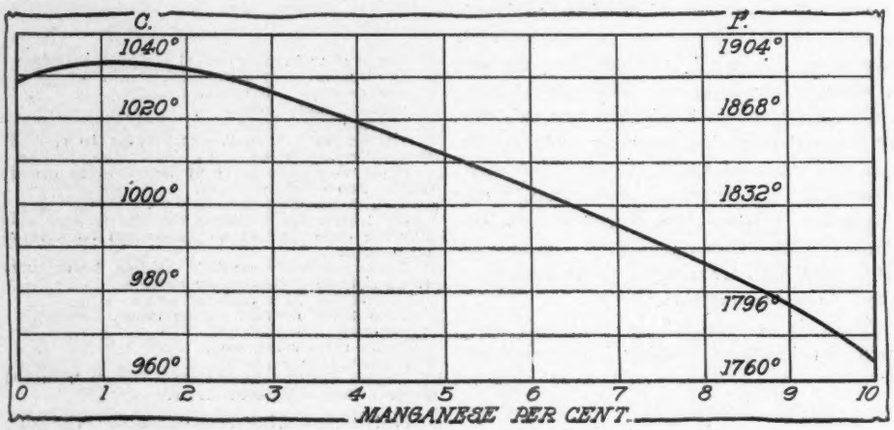


FIG. 34—FREEZING POINT CURVES OF ALLOYS, 9% ALUMINUM

THE full results of all the cooling curves observed are tabulated in table 43, where the initial freezing point and all subsequent arrest points or retardations are recorded. The points there recorded are only those which undoubtedly exist, as shown by duplicate observations; in one or two instances it was not quite certain whether a small irregularity in the curve really indicated a retardation or not, but in those cases the authors prefer not to record a point; in any event these retardations represent extremely minute evolutions of heat, and it is probable that no serious error will result—so far as the present state of our knowledge of these alloys can go—by their omission. Table 43 refers to observations by the inverse-rate method used with the delicate potentiometer of the laboratory, and with thermocouples repeatedly standardized by recognized freezing points in the usual manner.

The initial freezing points, as stated in table 43, represent, in the majority of cases, definite arrest points which can only be interpreted in one way; the Retardations on Cooling, however, are not of so definite a nature, and it

PART VIII.

should be pointed out that most of these cover a range of from 15 to 45 degrees, from the first definite deflection of the curve to a point where it can be definitely said from the shape of the curve that the evolution of heat is at an end. The temperatures given in the table lie in the center of these ranges and indicate—as will be seen on reference to the curves reproduced in Figs. 24-27—the point of maximum deflection of the curve, since this point indicates the temperature at which the change in question occurs most vigorously; since, however, the exact shape of each such peak is dependent upon the rate of cooling as well as upon the properties of the alloy itself, the precise temperatures given in the tables possess no very great significance; they depend somewhat upon the exact method of experiment adopted, and, indeed, it has been found that the corresponding temperatures taken from derived differential curves—see Figs. 28-32—are slightly different. This

TABLE 43

—Composition—				Initial freezing point	Retardations of cooling between		
					950°C. and 700°C.	700°C. and 550°C.	Below 550°C.
No.	Cu.	Al.	Mn.	°C.			
59	97.57	1.19	1.14	1,077	..	..	..
51	95.88	1.37	2.75	1,045	..	..	..
15	94.04	1.04	4.92	1,051	..	..	..
43	93.20	1.42	5.38	1,023	..	..	481
38	92.58	0.94	6.48	1,015	..	..	..
29	90.85	1.43	7.72	1,007	..	..	..
29A	90.74	0.91	8.16	1,011	..	..	505
71	87.85	1.91	10.24	985	..	..	..
68	97.31	2.69	...	1,075	..	..	..
55	95.69	2.36	1.95	1,057	..	..	..
47	93.87	2.31	3.82	1,045	..	..	500
34	89.93	2.27	7.80	1,010	..	..	..
24	87.87	2.37	9.76	996	..	..	..
58	95.77	3.26	0.97	1,059	..	..	..
50	93.32	3.71	2.97	1,042	..	..	505
011	93.08	3.93	2.99	1,043	..	..	..
16	91.91	3.29	4.80	1,024	..	..	540
42	90.79	3.57	5.64	1,022	..	..	..
37	90.04	3.08	6.88	1,015	..	..	..
28	88.15	3.95	7.95	995	..	..	..
60	95.33	4.67	...	1,067	..	..	..
54	94.09	4.14	1.77	1,054	..	..	..
73	92.12	4.62	3.26	1,031	..	..	..
46	91.66	4.48	3.86	1,036	..	..	505
33	87.75	4.51	7.74	987	..	..	..
021	86.28	4.12	9.60	975	..	..	..
57	93.81	5.21	0.98	1,050	..	..	..
49	91.86	5.66	2.58	1,035	..	..	..
2	89.93	5.21	4.86	1,018	..	593	..
41	88.14	5.86	6.00	1,001	..	..	534
36	88.09	5.19	6.72	998	..	624	..
27	85.88	5.62	8.50	986	..	..	..
1	85.21	5.99	9.50	976	..	598	..
56	92.14	6.88	0.98	1,025	..	..	..
53	91.48	6.54	1.98	1,030	..	..	..
45	90.21	6.29	3.50	1,022	..	..	..
76	88.56	6.62	4.82	995	..	..	..
32	85.72	6.26	8.02	978	..	..	..
23	84.03	6.91	9.06	957	..	..	..
61	92.60	7.40	...	1,042	..	..	..
69	92.04	7.96	...	1,037	..	..	..
52	89.08	7.98	1.94	1,015	..	..	500
010	89.70	7.51	2.79	1,012	..	678	..
48	89.60	7.30	3.10	1,013	..	..	505
014	89.27	7.09	3.74	1,003	..	..	..
17	87.30	7.96	4.74	1,000	928	..	..
017	88.22	7.25	4.99	972	..	..	..
*9	87.16	7.92	4.92	1,003	912	..	482
018	86.89	7.36	5.74	990	..	..	490
75	85.87	7.05	7.08	970	..	..	..
26	84.11	7.81	8.08	971	894	..	..
63	91.45	8.55	...	1,026	..	..	550
*6	88.11	8.91	2.98	1,028	862	..	511
09	88.80	8.08	3.12	1,007	949	..	495
*8	88.04	8.02	3.94	1,017	939	..	499
40	86.00	8.18	5.82	999	859	..	493
77	85.23	8.65	6.12	985	..	..	..
35	84.65	8.13	7.22	985	818	..	..
31	83.86	8.42	7.73	987	760	..	..
25	82.85	8.67	8.48	985	..	636	481
80	82.23	8.25	9.52	956	..	..	..
00	90.39	9.61	...	1,042	805	..	..
*4	89.91	9.16	0.93	1,039	906	..	523
*5	88.99	9.06	1.95	1,030	884	..	511
*3	88.30	9.82	1.88	1,036	802	..	511
*7	86.89	9.33	3.78	1,020	807	..	500
015	85.55	9.71	4.74	1,028	841	..	511
79	85.75	9.24	5.01	996	..	..	485
22	81.20	9.22	9.58	979	..	588	505
70	89.25	10.75	...	1,045	..	..	523
*1	89.54	10.03	0.43	....	..	..	..
*2	89.06	10.02	0.92	1,040	757	..	523
44	85.93	10.33	3.74	1,021	...	..	†
3	85.17	10.07	4.76	1,017	757	575	487

† 540 and 493.

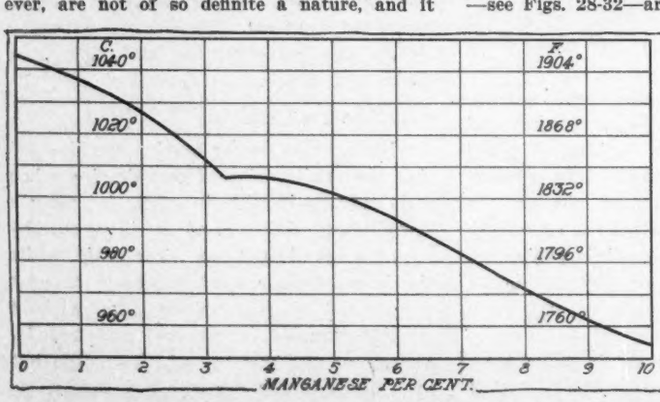


FIG. 35—FREEZING POINT CURVES, 7.5% ALUMINUM

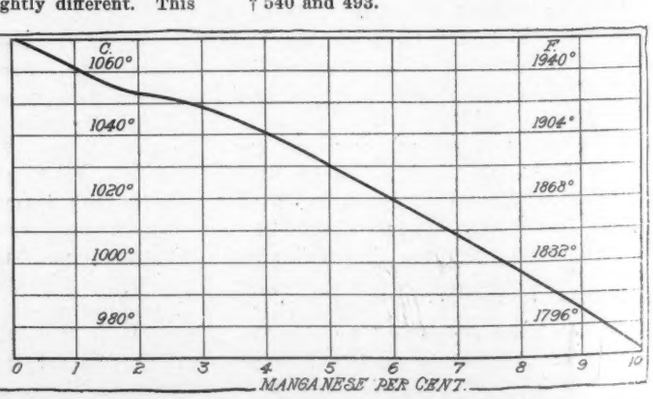


FIG. 36—FREEZING POINT CURVES, 4% ALUMINUM

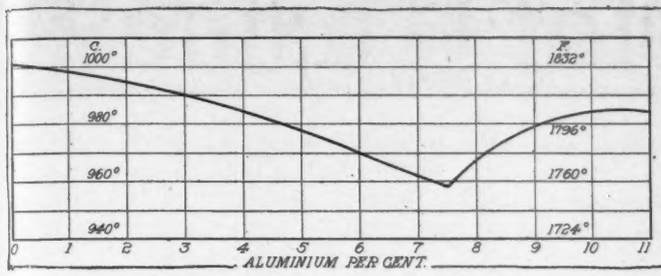


FIG. 37—FREEZING POINT CURVES, 9% ALUMINUM

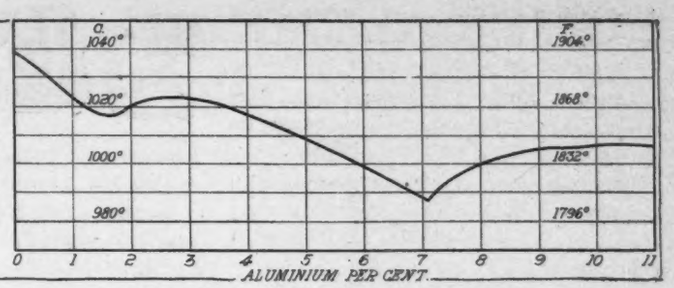


FIG. 38—FREEZING POINT CURVES, 6% MANGANESE

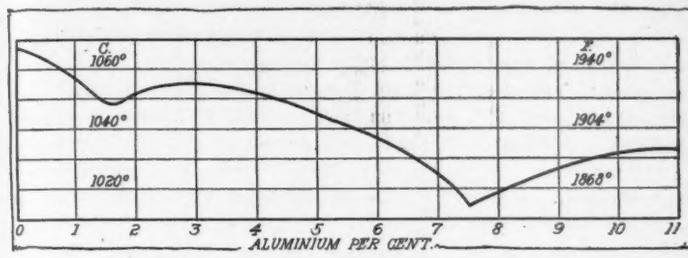


FIG. 39—FREEZING POINT CURVES, 3% ALUMINUM

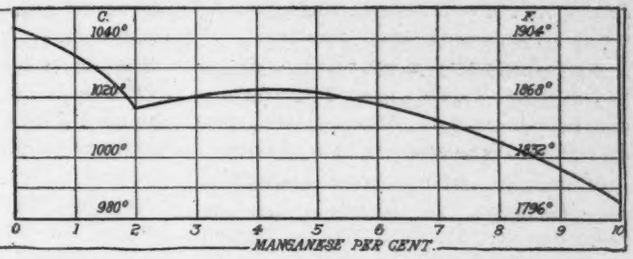


FIG. 40—FREEZING POINT CURVES, 9% MANGANESE

difference is not due to any error in either method, but simply to the fact that the differential observations were taken at a slower rate of cooling—the actual ranges covered by the various transformations are very nearly the same in the curves derived from both methods; at all events the maxima found by either method always lie within the range as determined by the other method.

The results tabulated in table 43 have been used for the construction of a graphical representation of the freezing points of the system of ternary alloys within the limits of composition already indicated. In the case of a binary system the locus of the freezing points of all the alloys can be represented in the well known manner by means of a freezing point curve; in the case of a ternary system, however, we have already seen that the representation of the compositions of the alloys already requires the use of a two-dimensioned diagram, so that for the representation of any of the properties of the alloys a three-dimensional method of representation is necessary. For the present purpose a model of this kind has been constructed by the process of erecting vertical co-ordinates representing the freezing temperatures upon the various points of the ternary diagram and subsequently modelling a smooth surface to fit the points thus determined. The actual process employed by the authors consisted in the erection of actual verticals, in the shape of steel wires accurately cut to the required length, upon a wooden base set out to represent the ternary diagram on a scale of 20 millimetres for every 1 per cent, while the vertical scale adopted was 1 millimetre per degree Centigrade—this very open temperature scale being required in order to show the features of the freezing point surface clearly in the model. From the array of wires thus obtained cardboard templates, representing sections of the resulting surface along a series of lines parallel to the edges of the model, were taken and fitted together to form a lozenge-shaped box made of small lonzenge-shaped reticulations. These were then filled to a certain height with plaster-of-paris and the remainder filled in with plasticene, which was then modeled by hand to give a smooth surface fitting the cardboard templates as closely as possible.

The contour-lines representing each ten degrees of temperature have been drawn on the model, and are shown in plan in Fig. 33, while Figs. 34, 35, 36, 37, 38, 39 and 40 represent sections of the model along the lines corresponding to the stated compositions in each case.

An inspection of the model of the ternary liquidus surface at once indicates the fact that in general terms the ternary alloys within the limits of the present model, reproduce the characteristics of the copper-aluminum series with a considerable degree of fidelity. The sections of the model taken along lines of constant manganese content, Figs. 37, 38 and 39, all show the deep minimum which is found in the pure copper-aluminum series between 7 and 9 per cent of aluminum, although both the position and depth of this minimum varies considerably with various proportions of manganese. There is, however, a remarkable feature in the model surface which is indicated by the peculiar shape of the contour lines in the region between 3 and 8 per cent manganese and 0 to 3 per cent of aluminum; on the model itself this feature appears as a hollow or depression, and it makes itself apparent also in the smaller minima indicated on the sections of the model along the lines of constant manganese already referred to. It must, of course, be borne in mind that the scale of both models and diagrams is very large, and consequently this minimum is neither very deep nor sharply defined, but the pyrometric data undeniably indicate its presence. In view of the microscopic observations to be described later the authors take the view that this minimum is not associated with the presence of any special constituent, but arises somewhat in the manner in which slight curvatures of liquidus curves arise in portions of binary systems from some change in the molecular volume of one of the dissolved metals in the series of solid solutions which this portion of the model represents.

The sections of the diagram parallel to the edge representing the alloys of copper and manganese also reproduce the features of the parent binary system very closely; except in the case of the alloys along the lines of 7.5 per cent aluminum there is no departure from the smooth curve of the binary system; in that particular section, however, the line of section cuts the curiously curved path of the tenary minimum and a slight cusp is thus introduced into the diagram. As will be seen later, this cusp represents the transition from the series of homogeneous solid solutions to the region of duplex alloys.

Before proceeding to any discussion of the constitution of these alloys and to the examination of their micro-structure, reference must be made to the lower arrest points as tabulated in table 43 and as derived from the differential curves of Figs. 28-32—Motor Age, June 2, pages 48 to 49—inclusive. These points have been plotted on the ternary diagram, Fig. 41, and the path of the ternary minimum has also been indicated on this figure. An examination of this figure and of the table will at once show that the study of these lower evolutions of heat presents a series of problems of great complexity. Indeed, if it is borne in mind that a perfectly satisfactory explanation of the corresponding points in the binary system copper-aluminum has not yet been arrived at, it will be obvious that it is as yet somewhat hopeless to attempt a complete study of this complex tenary system. Perhaps the most perplexing feature about these critical points is the fact that while more or less closely corresponding points are observed in a large number of alloys, other intermediate alloys show no signs of these heat evolutions, although the cooling experiments were conducted under precisely similar conditions. Thus in table 43 we have, as an example, alloys Nos. 50, 011 and 16; the first and last of these show an arrest point below 550° C.—1,022° F.—but the intermediate one does not. Results of this kind become still more evident when the negative results are included in the diagram of Fig. 41. In that figure alloys showing no definite arrest point below the initial freezing point are indicated by black dots, as distinguished from the small crosses which indicate alloys, having arrest points at the temperatures indicated. Perhaps the only generalization which can be arrived at from these results is that the alloys lying on the copper side of the ternary minimum either show no arrest point or at most one only at a moderately low temperature; the temperatures range from 481° C. to 624° C.—898° F. to 1,155° F.—but show no regular variation in passing from one part of this area to another; none of the alloys containing more than 95 per cent of copper show any arrest points at all. Of the alloys lying to the right, the aluminum side, of the ternary minimum, the majority show arrest points, and many of these show two, one of which generally lies above 800° C. —1,472° F.—while the other lies below 600° C. —1,112° F.—but there are exceptions even to this vague rule, since some of the alloys, such as No. 44, show two distinct points—at 540° and 493° C.—1,004° F. to 919° F.

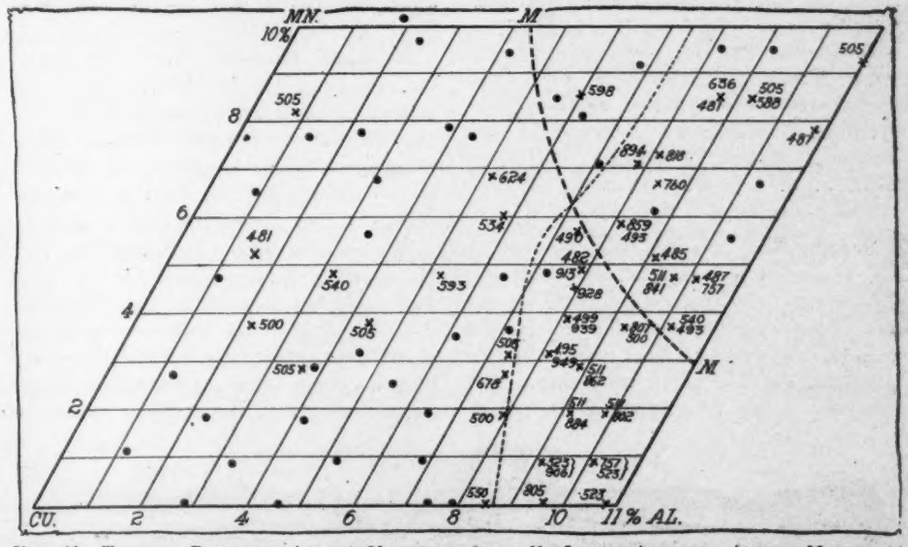


FIG. 41—TERNARY DIAGRAM; ALLOYS MARKED o SHOW NO LOWER ARRESTS; ALLOYS MARKED × HAVE ARREST POINTS AT TEMPERATURES INDICATED; ALLOYS TO RIGHT OF MM ARE MAGNETIC

Brief Business

LANSING, MICH.—The Evans Motor Car and Parts Mfg. Co., of Detroit, has been organized with a capital of $30,000.

Lansing, Mich.—The Detroit Auto Specialty Co., of Detroit, has increased its capital stock from $50,000 to $75,000.

Washington, D. C.—The Paterson Sales Co. has opened a store at 732 Thirteenth street, N. W., with Charles H. Holmes as manager.

Hartford, Conn.—Carl H. Page & Co., of New York, have opened a Chalmers branch in this city. For the time being headquarters are temporarily at the Heublein.

Minneapolis, Minn.—The National Gauge and Register Co. has moved its factory and headquarters to LaCrosse, Wis. The concern makes accessories and supplies.

Washington, D. C.—The Maxwell-Briscoe Washington Co. will open its new salesroom at 1323-25 Fourteenth street, N. W. John R. Thomas will be the manager.

Cleveland, O.—A new company organized in Cleveland is the Bever Motor Car Co. Herbert J. Bever is manager. The company has taken the Zimmerman and Auburn cars.

Bellair, O.—The Poorman-Morris Co. has been incorporated with a capital stock of $5,000 to operate a garage by J. F. Johnson, J. E. Poorman, W. H. Morris, Ella Morrell and D. D. DuBois.

Akron, O.—The Miller Rubber Co. has established agencies for Miller tires in New York city and Boston, which are located in the heart of the motor district, and have stock of all sizes.

Milwaukee, Wis.—The Sternberg Mfg. Co., of Milwaukee, Wis., is about to take possession of its new $60,000 factory in West Allis, a suburb, where it will make the Sternberg friction-drive trucks.

Buffalo, N. Y.—The Dixon Motor Car Co. has started with a capital of $15,000. The incorporators are John C. Dixon, 408 Potomac avenue; Robert A. Myers, 1008 Main street; Arthur Dixon, 408 Potomac avenue.

Monessen, Pa.—A new company has been formed to distribute the Lyon throughout five counties of western Pennsylvania. The officers of the company are: President, George H. Stevens; vice-president, J. J. Cushing; treasurer, William Herron; secretary, J. B. Culler.

Reading, Pa.—The Middleby Automobile Co. has recently completed extensive improvements to its factory, including a foundry, paint shop, upholstering and woodworking department. This means the employment of about fifty more men. The company is now turning out a large touring car, a toy tonneau, a single and double rumble and a surrey.

Kansas City, Mo.—Theodore Winningham was granted a permit for a brick garage at 3821-23 Main street, to cost $7,000.

Chicago.—The Hayes Avenue Garage Co. has been organized by Charles Gleinfelder, Alfred Rodgers Pearson and Charles B. Obermeyer.

Detroit, Mich.—The Buick Auto Supply and Garage Co., with general offices at Saginaw, Mich., has opened offices at 415-416 Buhl block, with Hugh L. Mines in charge.

Columbia, Tenn.—The Fry Brothers Motor Car Co. will conduct a garage and agency; capital, $5,000. Horace Rainey, J. C. Parks, Andrew Dale Carlton and Clarence Fry are interested.

Altoona, Pa.—A permit has been granted to C. D. Hughes for the construction of a three-story brick building at 1109-11 Chestnut avenue, for W. H. and L. C. Wolfe, to be used as a garage sales building, to cost $12,000.

Binghamton, N. Y.—The Chenango Motor Sales Co. has started a general sales business with a capital of $15,000. The incorporators are Harry K. Crandall, Vine Crandall, Athens, Pa.; Fred D. Corey, 210 Pearl street, Buffalo, N. Y.

Canton, O.—The Canton Motor Car Co. has been incorporated with a capital of $50,000 to do a general garage and sales agency business, including dealing in motor trucks, by J. E. Milner, P. E. Mooch, A. E. Mitzel, H. V. Briggle and M. W. Richards, Jr.

Nashville, Tenn.—The Imperial Motor Car Co. has been organized. James S. Frazer is president and Banks Bennie secretary and treasurer. The company will have the agency of the Packard. These same two young men are proprietors of the Nashville Taxicab Co.

St. Louis, Mo.—The Weber Implement Co., agent for the Mitchell, has been appointed representative in eastern Missouri and southern Illinois for the Rapid truck. A garage will be maintained at 4921 Delmar boulevard. J. E. Burton will have charge of the truck department.

Los Angeles, Cal.—A new garage and salesroom is being erected at 118 West Pico street by the Kissel Automobile Co. C. L. Leppo, who has been connected with the Kissel factory for the last 2 years, will be general manager and Bert Latham assistant manager. The company maintains temporary quarters at 1246 South Flower street.

Beaumont, Tex.—The Standard Auto Co., capital $3,000, has been incorporated by C. J. Chaiso, Harry McKee and O. W. Putnam.

Pasadena, Cal.—Lewis J. Hampton, local representative of the Ford and Velie, has purchased the property at 89 North Marengo avenue and will erect a garage to cost $8,000.

New Haven, Conn.—C. E. Wheeler has retired from the firm of Wheeler & Wuestfeld to take a position with the Owen Motor Car Co. of Detroit, becoming the eastern district manager, with headquarters in this city.

Columbus, O.—W. E. Evans, who has been conducting a garage and repair shop at Spring and Fourth streets, has leased a new building at 165 North Fourth street. Associated with him will be Michael Abel, who has the central Ohio agency for the Baker.

Newark, N. J.—A. De Addario has been granted a permit to build a one-story brick stable and garage at 77 Hoyt street, to cost $1,000. A permit was also granted to John S. Bell for a one-story cement brick garage at 173 Roseville avenue, to cost $1,000.

San Diego, Cal.—F. Byron Naylor, local agent for the Buick and Premier, is erecting a fireproof garage on the southeast corner of Seventeenth and C streets, of brick and concrete, covering an area of 100 square feet, to cost $15,000. The building will be devoted entirely to garage and

Recent Incorporations

Wellesley, Mass.—Wellesley Auto Transit Co., capital stock $25,000; to carry on a general motor car business; incorporators, W. H. Pfeffer and C. N. Taylor.

Chicago—Mack Motor Truck Co., capital stock $10,000; to carry on motor car express, livery and taxicab business; incorporators, Matt B. Pittman, Gilbert Noxon and Ralph W. Cavanaugh.

Chicago—Graham Differential Gear Co., capital stock $150,000; to manufacture motor cars, and parts; incorporators, P. Steele, J. T. Tyrrell and G. J. Jeffries.

Chicago—Wilcox Motor Car Co., capital stock $12,000; incorporators, Arthur L. Pallas, Fred J. Wegg and George J. Meier.

Portland, Me.—Portland Motor Mart and Amusement Co., capital stock $50,000; incorporators, R. T. Whitehouse, W. E. Whipple and R. T. Whitehouse.

Dallas, Tex.—Imperial Garage & Sales Co., capital stock $10,000; incorporators, Paul S. Miller, J. W. Crotty and I. A. Miller.

Indianapolis, Ind.—Bimel Spoke and Auto Wheel Co., capital stock $130,000; incorporators, Fred Bimel, J. O. Pierce, J. A. Fuqua, W. D. Schwartz and W. H. Detamore.

Springfield, Mass.—Automobile Lighting Co., capital stock $30,000; motor car apparatus, etc.; president, H. W. Field, vice-president, Matthew N. Ryan, and treasurer, C. P. Lyman.

St. Paul, Minn.—Hennepin Auto Co., Wilcox truck.

Minneapolis, Minn.—Hennepin Auto Co., Badger.

Announcements

machine purposes, and Mr. Naylor will retain his present quarters on First street.

Plainfield, Wis.—Baldwin & Co. have purchased a machine shop building in the city and are converting it into a garage, with a large repair shop in connection.

Omaha, Neb.—The South Omaha Automobile Co. has opened a new garage at 436-40 North Twenty-fifth street, South Omaha. Henry Petersen and his son, N. H. Petersen, are the proprietors. They will handle the Cartercar, Deal and Imperial.

New York.—The White Shot Safety Signal Co., to manufacture and deal in automatic signals for motor cars, carriages and vehicles of all kinds, has been incorporated with a capital of $100,000. The incorporators are Leo O'Brien, Edward E. Davis, 54 Pleasant avenue, Montclair, N. J., and James T. Bunt, 100 Broadway.

Omaha, Neb.—The work of wrecking the building at Twelfth and Farnam streets to prepare for the big new garage of the Freeland Brothers-Ashley Co. is under way. The building will be four stories high, and the Freeland Brothers-Ashley Co. and the Apperson sales agency will occupy practically all the space.

St. Louis, Mo.—The Whittaker Motor Car Co. has changed its name to the American Garage Co., and is installed in a garage at 5875-81 Delmar avenue. The building contains 15,700 square feet of floor space, and will accommodate ninety cars easily. In addition to the agency for the Everitt the company has obtained the Rambler. An electric charging plant will be maintained.

Northampton, N. J.—The Mount Holly Garage has been started by Walter T. Stewart, Ellis H. Parker and W. Roland Warrick.

Plattsburgh, N. Y.—The Booth Taxicab Co. has been incorporated with a capital of $2,000. The directors are Charles M. Miller, Harry L. Booth, Seth S. Allen, of Plattsburgh.

Atlanta, Ga.—W. C. M'Nabb and T. Stacey Capers have purchased the National garage at 38-40 Auburn avenue and have the state agency for the Parry and De Tamble.

Camden, N. J.—The Falcon Motor Car Mfg. Co. has incorporated to manufacture and sell motor cars. The capital is $125,000. The incorporators are Frank A. Kuntz, Joseph P. Murray and William S. Kell.

New York—The Harlem Auto Repair Co. has been incorporated to rent, repair, store and deal in motor cars of all kinds. The capital is $4,000, and incorporators are John J. Skerrett, Frank Skerrett and Alfred D. Dowrie, 506 West 151st street.

Buffalo, N. Y.—The Buffalo branch of the Ford Motor Car Co. will move into a new building about October 1. The structure will cost about $50,000 and will be erected at the northeast corner of Main and North streets. The building will be 100 by 100, with the salesroom one of the largest in the city.

Chicago—The Tuthill Spring Co. is adding a building 53 by 118, which will give it a total building of 249 by 118, with an engine room 25 by 80 additional, or a total floor space of 31,482 feet. The company is turning out over 200 tons per month of body springs, a good part of which is for motor cars.

Omaha, Neb. — The Maxwell-Briscoe branch has moved into its new garage and salesroom at 2115 Farnam street. The new structure is two stories high with a 50-foot frontage on Farnam street, and is 128 feet deep. The salesroom is 50 by 40 feet, with large show windows. The finishing is of maple throughout.

New York—The following officers have been elected at the meeting of the Garage Owners' Association: Charles D. Chase, manager; directors, G. Edward Shaw, D. L. Dean, W. D. Carleton, I. D. Siegel, C. S. Bader, W. S. Horner, Austin P. Palmer. The object of the association is to eradicate the existing evils of the garage business and to protect the owners of cars from the present troubles that beset them.

Horicon, Wis.—Louis Dietz has purchased a building on Lake and Hubbard streets and will convert it into a garage.

Topeka, Kan.—Stephen Johnson, of Emporia, has purchased the Stafford Motor Car Co.'s garage at Seventh and Quincy streets.

Orland, Cal.—A joint stock garage company has been formed in Orland and has arranged for the building of a garage 50 by 100, of concrete blocks.

Merrill, Wis.—The Merrill Iron Works, agent for the Overland, will occupy its new garage, 60 by 80 feet, this week. It will deal in supplies, accessories and gasolene.

Washington, D. C.—The White Co. has closed its branch at 1124 Connecticut avenue, N. W. A temporary agency for the White has been established in the Belmont garage.

Milwaukee, Wis.—Articles of incorporation have been filed by the W. S. Seaman Co. The purpose is to manufacture motor car bodies. The capital stock is $50,000.

Cleveland, O.—The American Dismountable Rim Co. has been incorporated with an authorized capital of $50,000 by George B. Harris and others to manufacture a patented rim.

Cleveland, O.—C. C. Early, recently with with the Cleveland branch of the Franklin Automobile Co., has connected himself with the sales department of the Euclid Automobile Co., of the same city.

Syracuse, N. Y.—The Clinton Automobile Co. recently incorporated. It is composed of M. S. Powell, Fulton; A. F. Nellis, Phœnix, and F. S. Leggett, Syracuse. The concern is to handle White, Stearns and Speedwell cars.

Lockport, N. Y.—The Covert Motor Vehicle Works, manufacturer of parts of motor cars, soon will begin the work of doubling the size of a plant on Grand street in this city. It is proposed to erect a new building adjacent to the present structure.

Pittsburg, Pa.—Jesse C. Stewart, Pittsburg agent for the George C. Christian Milling Co., of Indianapolis, has bought one of the finest sites in the city, on Center avenue near Morewood avenue, and will build an eight-story garage at once.

Cleveland, O. — The Reliance Motor Truck Sales Co. was organized last week under the laws of Ohio with a capital stock of $40,000. R. E. Veach has been selected as manager, and will have charge of the sales end of the agency. The company will take care of all trucks purchased.

Klamath Falls, Ore.—Zim F. Baldwin, Buick.
Milwaukee, Wis.—R. D. Rockstead, Warren-Detroit.
Columbus, O.—Howard & Wilkinson, Rapid truck.
Greenville, S. C.—Greenville Motor Car Co., Selden.
Staten Island, N. Y.—Alvan H. Doty, Jr., Selden.
Portland, Ore.—Hollenbeck Automobile Co., Croxton-Keeton.
Lomira, Wis.—Zaun & Tolzman, Pratt-Elkhart.
Oconto, Wis.—Peterson Brothers, Buick.
Syracuse, N. Y.—D. M. Black, Cameron.
St. Louis, Mo.—George R. Dunville, Kisselkar.
St. Louis, Mo.—Gray Motor Car Co., Klinekar.
Columbus, O.—John P. Adamson, Haynes.
Boston, Mass.—George H. Hudson, Haynes.
Boston, Mass.—Corlew-Coughlin Motor Co., Wilcox trucks.
Washington, D. C.—Emerson & Orme, Regal.
Washington, D. C.—Maxwell-Briscoe Washington Co., Columbia.
Washington, D. C.—H. B. Leary, Jr., Bailey electric.
Pittsburg, Pa.—Selden Automobile Co., Selden.
Pittsburg, Pa.—Pittsburg Speedway Motor Co., Henry.

Legal Lights and Side Lights

TWO legal cases are just now the most talked about matters of interest to the Belgian motor world. The first one concerns the extraordinary severe sentence imposed by the judges of an Antwerp high court against Belgium's foremost racing car driver, Jules Fischer, of Vivinius car fame. Eight months in prison and an $18,000 indemnity are what this driver received at the hands of the court. The sentence is the result of the running over of a farmer on a country road by Fischer some time last year.

The other case concerns the former racing car driver, Hautvast. In July, 1907, during the Ardennes road race, at a turn of the road the steering gear of Hautvast's car broke. The car got off the road and fell into a deep embankment. At the turn two girls were standing watching the race, although warning had been posted and given orally that it was a dangerous place to stand. The girls were injured from parts of the car which broke in the smash. In the first court Hauvast was declared not guilty. The state's attorney appealed and in the second trial Hautvast was declared guilty, but the court decided that before allowing damages to the injured doctors should make an examination. Hautvast appealed and the supreme court quashed the decision of the second court, holding that the great speed, which in itself did not constitute an infraction of the law, was the cause of the accident but did not establish between the two facts a relation of cause to effect; neither did it show that the fault was with the driver. Therefore the case had to be retried before another court. This court named experts to examine the car driven by Hauvast, also the other two cars of the same concern which took part in the race and whose steering gear also broke during the race. These experts held that the material used in the making of the steering gears was possibly not strong enough for the use to which the cars were to be put.

The opinion of these experts was different from the one given by the expert named by the judge of a previous court. The case came up for a hearing recently and the state's attorney decided, owing to the contradictory statements of views of the experts, that the entire case is to be gone over once more.

Blacklist for Scorchers

A very clever idea in the way of stopping speeding of motor cars in the state of Michigan has been evolved by the secretary of state, who has sent out blanks to all townships and cities of the state, with a request that the names, addresses and other details of all persons who, within the past year, have been arrested for speed violations. It is the intention to compile this into a state blacklist, and have a copy on file in every city and township, so that as soon as a person is arrested for speeding it will be possible to ascertain if he has ever been arrested for the same offense, and the details of the previous case. By keeping this record and list up-to-date, it is thought that justices will be able to inflict the proper fines, considering the previous record of the offender, and in this way reduce the amount of speeding throughout the state.

Question of Lights

A motor car must carry two white lamps in front, seen at a reasonable distance, and have a red light visible in the rear of the car, according to the law in Montreal. Can this light in the rear be the reverse side of the lamps in front? Such was the defense of Roland Kimberley, a chauffeur. Evidence was given that on the evening of May 19 the car passed along St. Catherine street with only one lamp lit in the front and with no light visible in the rear. The defense contended that the front lamps gave a white light in front and a red light in the rear, and that that was all the law demanded. There was some disagreement between the two witnesses for the prosecution as to whether the car had two lamps lighted in the front or only one. Judge Lanctot said that he would give his decision later.

More Trouble in Washington

Maintaining that Washington, D. C., already has adequate laws for regulating the use of motor cars in this city, W. S. Duvall, president of the Automobile Club of Washington, appeared before the district commissioners and made a strong protest against the enactment of a new motor car law. A measure patterned after the new Maryland law has been drawn for introduction in congress, which body makes the laws for the District of Columbia. The proposed law provides that motor cars be identified with proper number tags; that the operators shall secure permits to operate and be subject to examination by the motor car board; that the speed be regulated; that there shall be a wheel tax; that there shall be severe penalties for infraction of the law.

Mr. Duvall pointed out that the above subjects were already taken care of in the present motor car law. "What excuse can be offered for the enactment of the proposed bill?" he asked. "Absolutely nothing but an increase of the burden of taxation upon motor car owners," he continued. He maintained that the proposition to tax motor cars in accordance with their horsepower was nothing more or less than a further attempt to levy not a second but a third tax on the same piece of personal property. Motor cars, like other personal property, are already taxed in accordance with their value, and where they are used for gain they are taxed under the excise laws. Mr. Duvall pertinently asked why they should be taxed a second and a third time, and if this was permissible, where will the imposition stop?

"As to the punishments or penalties to be inflicted for this proposed mere police regulation, they are so degrading and excessive as to render them simply absurd," he continued. "I find them to be on a par with crimes that are punishable by heavy fines and imprisonment. Thus, under a third offense within a year, the offender must be fined not less than $50, but may be fined $250, and he must go to the workhouse for not less than 30 days or more than 6 months. Think of a law that would so degrade one of our esteemed citizens that in the event he was convicted three times within a year of some trivial infraction of a police regulation it becomes obligatory for a police court judge to fine him not less than $50 and send him to the workhouse for not less than 30 days!"

May Affect Buffalo

The question of whether the Callan motor car bill, recently signed by Governor Hughes, of New York state, will affect an ordinance introduced in Buffalo is being discussed. The ordinance provides an annual license fee of $10 for motor cars for hire that hold eight passengers or fewer, and $25 for those that hold more than twenty-five, which would include the sight-seeing cars. Solicitors of this passenger business must pay $20 a year license fee. Provision is made for numbered badges for chauffeurs. When the ordinance was up a year ago somewhat higher license fees were provided. These were modified to meet objections of motor car owners.

Wants Standard of Vision

The Delaware legislature probably will be asked, at its next session, to amend the state law so as to fix a standard of vision for motorists, similar to that for railroad engineers, and require applicants for motor licenses to have their eyes tested and produce certificates showing that their vision is up to the standard before being permitted to have licenses to operate machines. The subject is under consideration by the Optical Society of Delaware, which, at the semi-annual meeting, in Dover, a few days ago, had a general discussion in regard to the matter.